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DOMESTIC ENGINEERING

APRIL 16, 1932

Sells 10 Jobs in 4 Weeks

Piping Hot Water 2 Miles

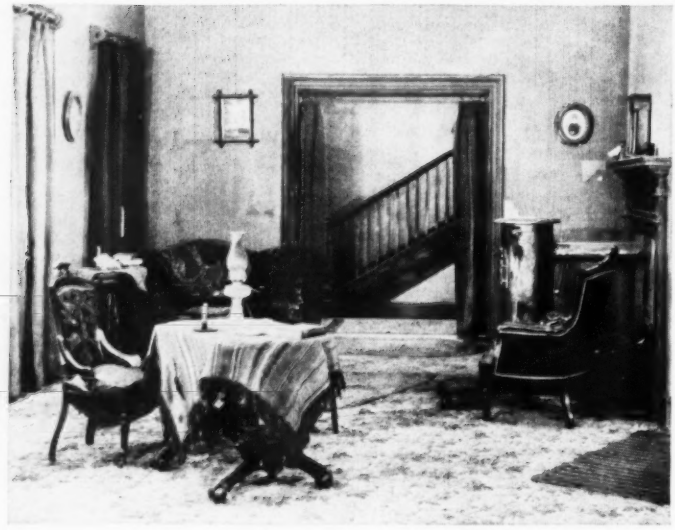
The Future of the Industry

By W. J. KOHLER, J. J. HALL, J. B. BERRYMAN, A. B. PIERCE, W. E. CLOW

AUTOMATIC HEAT Page 61

Plumbing & Heating Contracting and Merchandising

This was modern...*once!*



The oil lamp on the table... the horsehair furniture... the ornate picture frames... the cast iron stove, piped to the chimney flue... they were modern... once.

Exposed radiators also were modern . . . once. They are now being replaced by concealed heating . . . by convectors.*

Don't run the risk of having your work classed as old-fashioned in a year or two. Install Rome Convectors.

Concealed heating with Rocop Convectors is no longer complicated... nor difficult to figure. Rocop Convectors are now readily selected from 21 convenient sizes. They are all easy to install.

Rome has designed Convectors and Complete Units (consisting of convectors and enclosures) to meet every modern construction need. Moreover, Rome has standardized them not only as to types and sizes, but also as to methods of installation.

* *The A. S. H. V. E. Guide defines CONVECTOR as "a heater which is enclosed in a duct or cabinet and which gives off heat to an air stream, which passes into a room which is to be heated." Rome Radiation Company, therefore, gives the name Convector to its concealed heating units . . . Rocop and Robras.*

GREATER HEATING CAPACITY . . . LESS SPACE

Besides being *modern*, remember that Rome Convectors are built up to a high standard and not down to a price. They can be counted on for life-long service. They have maximum effectiveness because of the use of copper with its high conductivity . . . the highest of any commercially available metal. This results also in compactness . . . an important item in all modern construction.

For unusual requirements, write us stating problem. Send a sketch with dimensions; if possible we will be glad to recommend the correct Robras Convector to solve your unusual problems.

ROCOP and ROBRAS Convectors are fully described and illustrated in two Rome Bulletins. Other data included: tables of capacities and weights, dimension diagrams, methods of installation, etc. Rome will be glad to mail you copies.

\+ \+

WANTED . . . Agents of good character and ability to represent Rome Convectors in territories still open. Inquiries invited.

Rome Radiation Company

DIVISION OF

Revere Copper *and* Brass Incorporated

ROME, N. Y.

VOGEL NUMBER TEN-A Seat Action Closet Combination, with concealed tank. VOGEL NUMBER TEN has exposed tank. Either can be furnished with syphon action or syphon jet bowl.

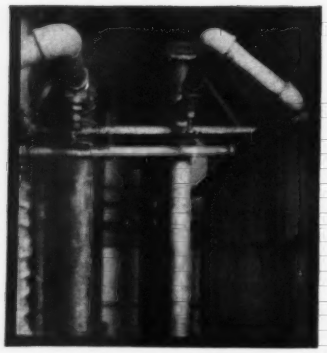
VOGEL Installations Build Good-Will For Plumbers

EVERY Vogel installation means a satisfied customer, and that means good-will, which you'll "cash in" on later. • Whether it's an installation in a factory, a school, or an institution, if you put in Vogels, they do their job —that is, give longer service with less upkeep. *We make sure* that the plumber gets his profit when he installs Vogels, because we sell only through the jobber and plumber.

JOSEPH A. VOGEL COMPANY

Wilmington, Del. **St. Louis, Mo.**

VOGEL PATENTED *Products*



DOMESTIC ENGINEERING

Plumbing & Heating Contracting & Merchandising

Established 1889

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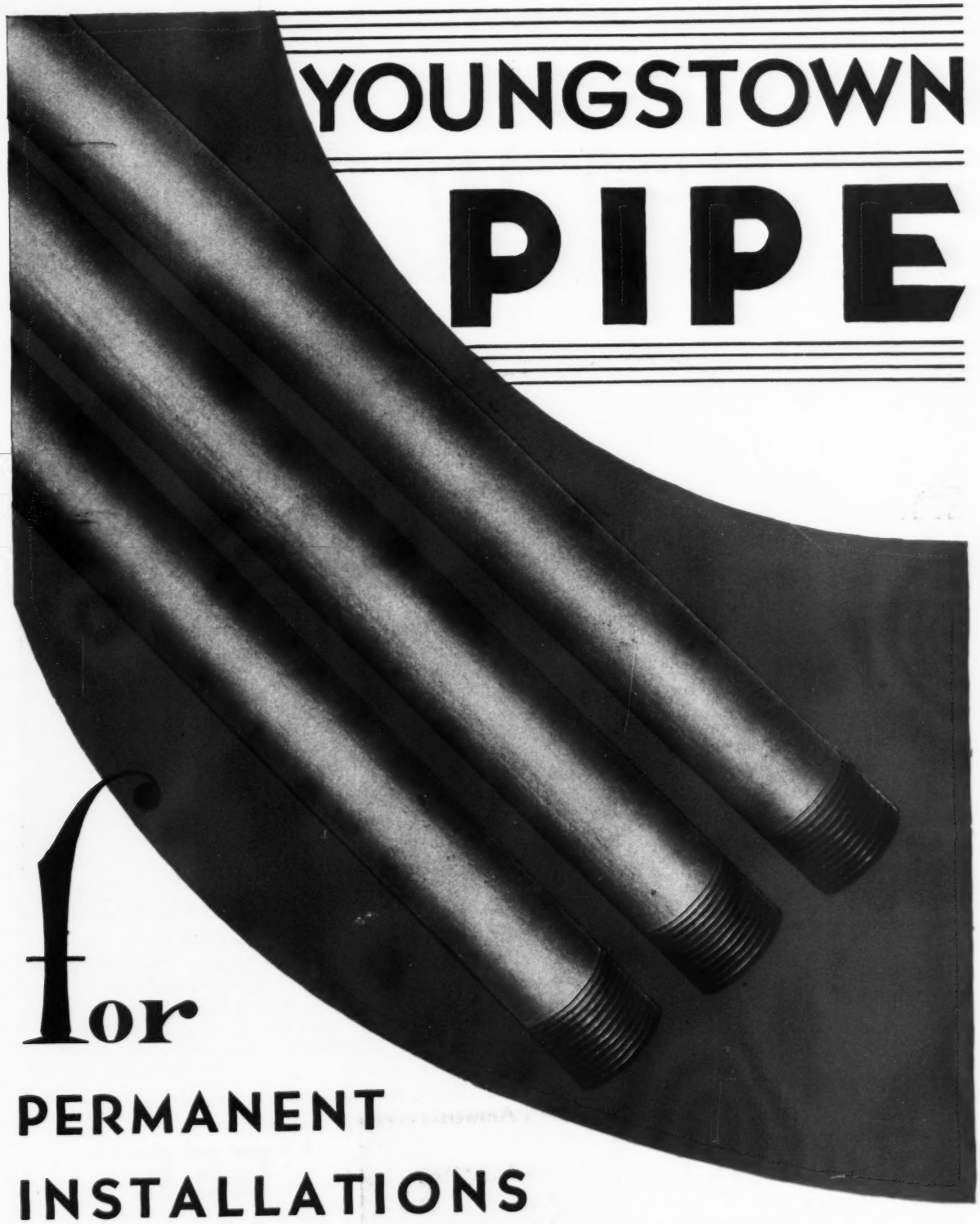
YOUNGSTOWN PIPE



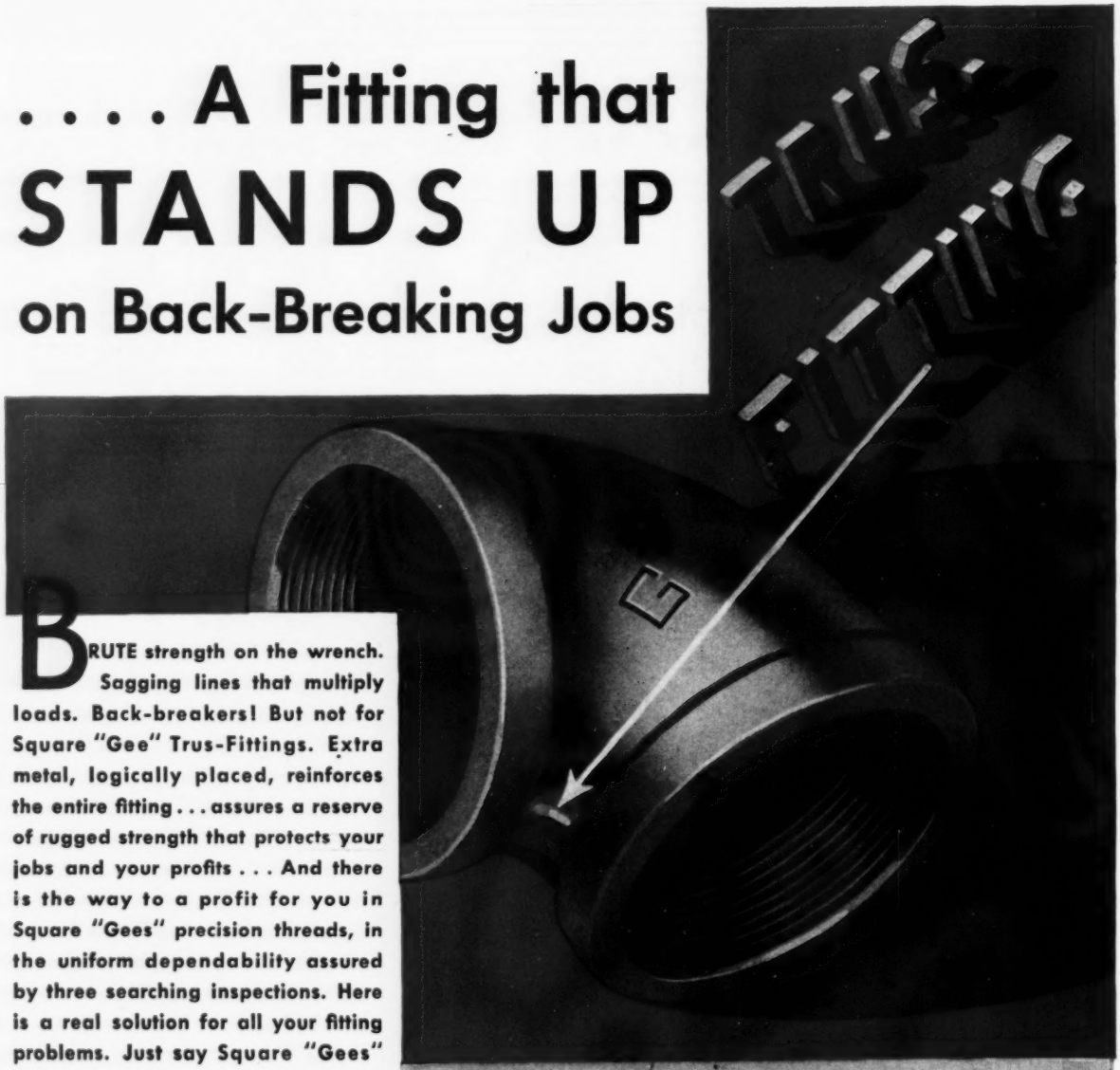
for

PERMANENT INSTALLATIONS

THE YOUNGSTOWN SHEET & TUBE CO.
GENERAL OFFICES YOUNGSTOWN, OHIO

WAIT LIBRARY

. . . . A Fitting that STANDS UP on Back-Breaking Jobs



BRUTE strength on the wrench. Sagging lines that multiply loads. Back-breakers! But not for Square "Gee" Trus-Fittings. Extra metal, logically placed, reinforces the entire fitting . . . assures a reserve of rugged strength that protects your jobs and your profits . . . And there is the way to a profit for you in Square "Gees" precision threads, in the uniform dependability assured by three searching inspections. Here is a real solution for all your fitting problems. Just say Square "Gees" every time you order . . . It pays!

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THE SQUARE "GEE" LINE INCLUDES:
Standard and Extra Heavy Malleable Fittings . . . Standard and Ground Joint Unions . . . Rail Fittings . . . Standard Cast Iron Steam Fittings . . . Standard and Patented Cast Iron Drainage Fittings . . . Standard and Extra Heavy Brass Fittings . . . Brass Unions . . . Steel and Brass Nipples . . . Hangers . . . Floor and Ceiling Plates.

YOUR FITTING PROBLEM IS SOLVED WHEN YOU SAY SQUARE "GEES"

SQUARE Pipe

"GEE" Fittings

MALLEABLE, CAST IRON

DRAINAGE, BRASS

Announcing the

"Standard"

ONE-PIECE CLOSET

HERE is a fixture with a stirring sales appeal. You can sell it readily when its fine points are appreciated.

Too long has a closet been just a closet to the public. Now you have one which is different, distinctive and attractive! And it's "Standard"

It is Quiet—Cannot be heard outside the bath or toilet room

It is One-Piece—Tank and bowl of genuine Vitreous China

It is Attractive—Typical of the skill of "Standard" designers

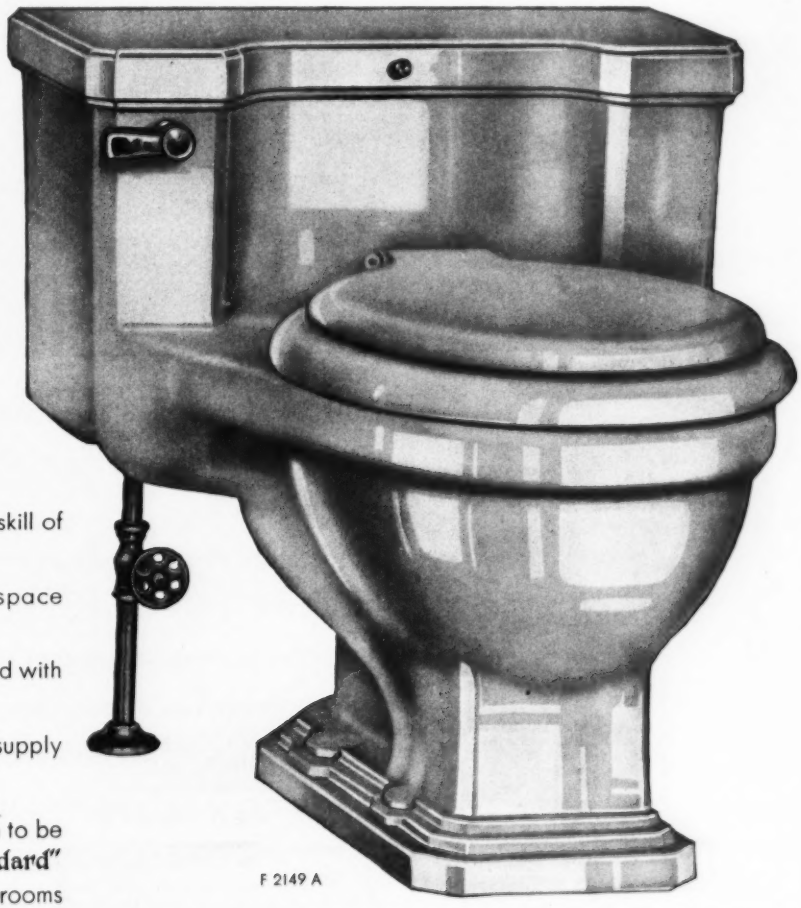
It is Compact—Requires less space than the usual closet

It is Economical—Can be flushed with four gallons of water

It is Complete—With fittings, supply pipe and seat

It is a fixture which should be seen to be appreciated. It is in all "Standard" showrooms and in the showrooms of many wholesale dealers. See it without delay. Take your customers to see it when possible.

Display one in your showroom or window. The "Standard" showroom plan offers an inducement to purchase it for display. Write for information.



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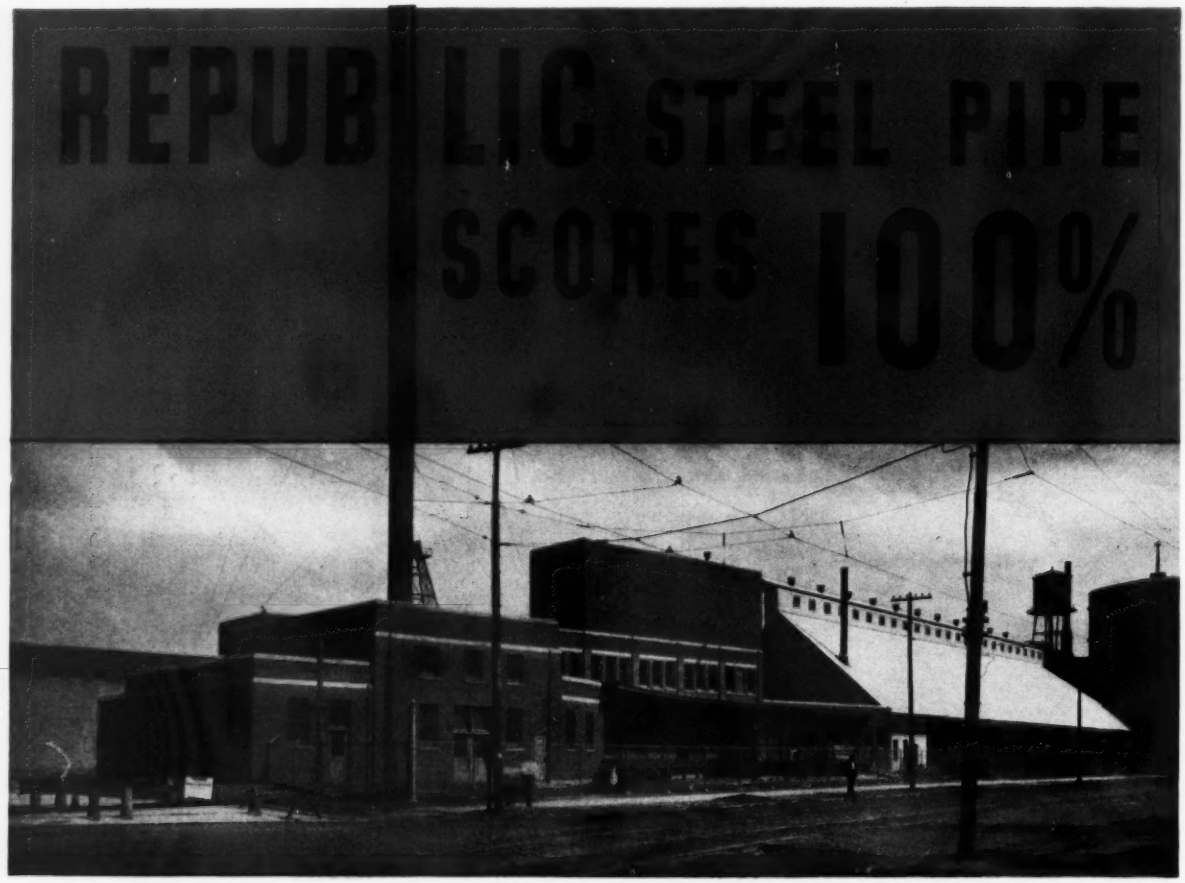
Standard Sanitary Mfg. Co.

PITTSBURGH, PA.

Division of

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION



Every foot of pipe that went into the plumbing and heating systems in the Chicago Plant of Morton Salt Company was Republic Steel Pipe.

Contractors should keep in mind that, despite the dearth of new industrial plant construction at the present time, plumbing and heating systems in existing plants must be kept up—must be modernized. For all such work, Republic Steel Pipe can be recommended, with full assurance that it will meet every expectation—in cost, in working qualities, in its ability to render service to the user.

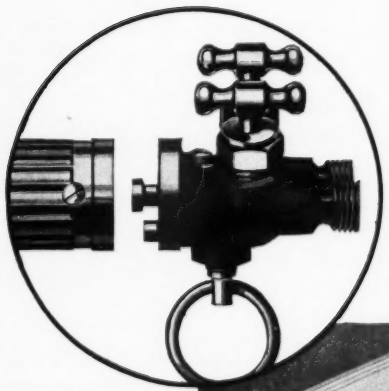
Your Supply House stocks Republic Steel Pipe or will be glad to get it for your specifications. Every length bears the name Republic. Look for it.

REPUBLIC STEEL CORPORATION

GENERAL OFFICES YOUNGSTOWN, OHIO

Who...?

MAKES PREST-O-WELD BLOWPIPES



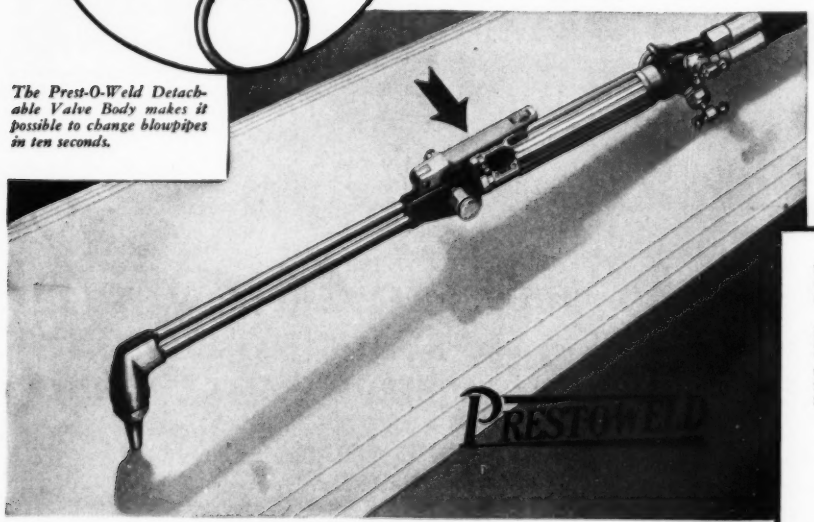
The Prest-O-Weld Detachable Valve Body makes it possible to change blowpipes in ten seconds.

PREST-O-WELD Blowpipes are made by Oxweld Acetylene Company, the largest manufacturer of oxy-acetylene welding and cutting equipment. In buying Prest-O-Weld Blowpipes, you share the advantages this company is able to give you as a result of its leadership in the welding and cutting field.

Made by Oxweld and sold by Linde, Prest-O-Weld not only can draw upon the resources and rich experiences of these two organizations—it also benefits from the extensive oxy-acetylene research activities of the Union Carbide and Carbon Research Laboratories, Inc.

When you buy Prest-O-Weld, you get apparatus that is scientifically accurate in design, extremely low in gas consumption, rugged in construction, and light and comfortable to handle.

Your jobber will be glad to show these and other advantages of Prest-O-Weld Blowpipes to you.



The new Prest-O-Weld Type C-105 Cutting Blowpipe, for all cutting up to 12 in., is equipped with the Prest-O-Weld Detachable Valve Body.

This light, well-balanced blowpipe is especially designed to resist rough handling. Its patented conical nozzle protects the seat when the nozzle is dropped. The head, cutting valve body, and lever are pressure forged for added strength. A 75 deg. angle head is furnished as standard.

Prest-O-Weld Type C-105 Cutting Blowpipe complete with 4 nozzles, lighter and wrench..... $42.00

Prest-O-Weld Type C-105 handle assembly with 4 nozzles, lighter and wrench (same as above but without valve body)..... $34.00

Prices slightly higher west of Rocky Mountains.

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

126 Producing Plants UCC 627 Warehouse Stocks

IN CANADA, DOMINION OXYGEN COMPANY, LTD., TORONTO

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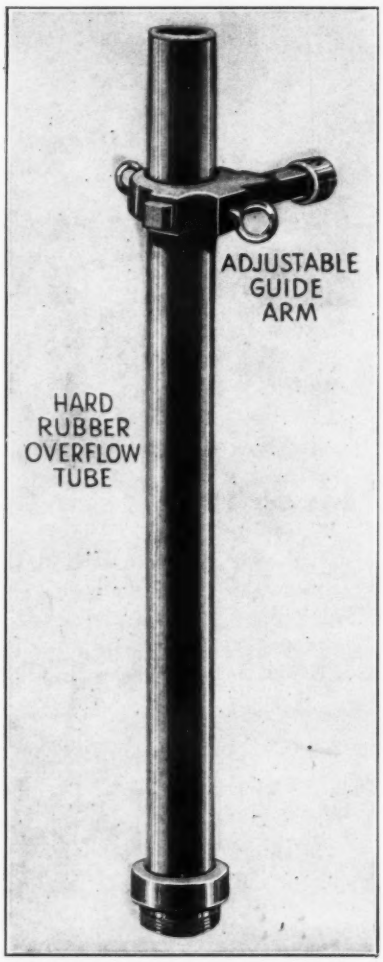
LINDE OXYGEN . PREST-O-LITE ACETYLENE . OXWELD APPARATUS AND SUPPLIES . UNION CARBIDE

STOKES HARD RUBBER

PLUMBERS

A good "Specialty Item" these days is much sought after. Here is an unusually good idea for interesting prospects in a small replacement item that may lead to bigger things.

Mark of Quality



LOOK!

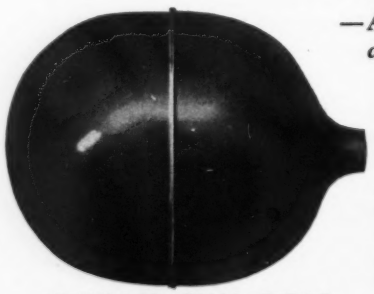
The Guide Arm may be pushed in or out and swung around the tube in such a way as to make the easiest possible connection with the tank ball. It is of course impervious to rust or corrosion.

Mark of Quality

ASK YOUR JOBBER

ASK YOUR JOBBER

THIS STOKES HARD RUBBER OVERFLOW TUBE *with* ADJUSTABLE GUIDE ARM *and* REDUCING BUSHING IS RECOMMENDED BY YOUR JOBBER. *ASK HIM!*



STANDARD OVAL FLOAT
(Patented)

—*AND PLUMBERS! ASK YOUR JOBBER ALSO about* STOKES HARD RUBBER FLOATS

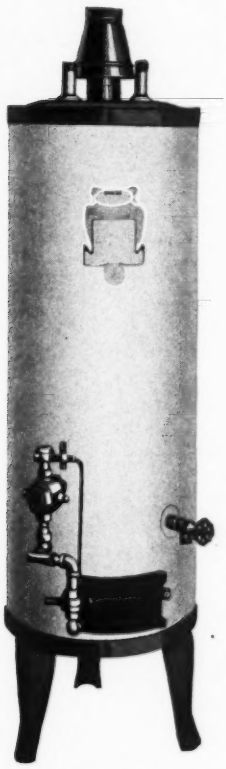
These Floats may be guaranteed for the life of the tank. They cannot rust or corrode. They are resistant to alkaline in water. They are a profitable item for YOU to carry.

Jos. Stokes Rubber Co.
Trenton N. J.
Moulders since 1897

Canadian Plant: Welland, Ontario

HARD RUBBER PRODUCTS IN EVERY CONCEIVABLE FORM — ALSO MOULDERS OF PLASTICS

3 LITTLE WORDS



Dixie (Series R) Automatic Storage Heater. Made in 3 sizes, 20, 30 and 40 gallons. List prices: $45.00, $55.00 and $65.00.

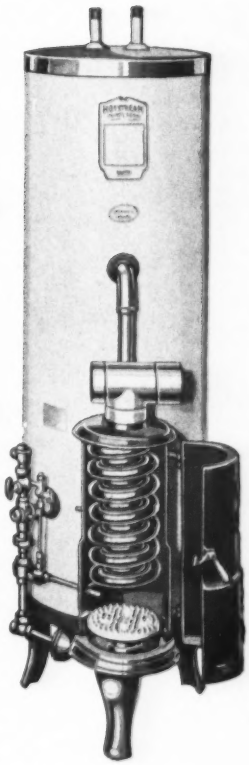
that mean Better Business for you

Both 1931 and the year before proved that the secret of easier, quicker, more satisfactory water heater sales is found in three words—

"Sell the Hotstream!"

And the reasons are many. The most important ones are: More homes, apartment buildings and shops can afford the Hotstream; more homes, apartment buildings and shops are in the market for the carefree, 24-hour hot water happiness Hotstream delivers; and more homes, apartment buildings and shops want the economy features the Hotstream offers. If you were selling Hotstreams to your community the past year, you can visualize the even rosier prospects of 1932; if you weren't — NOW is the time to get in on this momentum-developing business.

Write today for full details and our new catalog.



No. 20SA Hotstream Automatic Storage Heater, Side Arm Type, List Price $66.00 Complete

THE HOTSTREAM HEATER CO., Cleveland, Ohio

"Makers of Heaters that Heat"

Manufacturers of a Complete Line of Automatic Storage Heaters, Tank Heaters, Indirect, Gasoline and Kerosene Water Heaters

Represented in Canada by
W. H. Cunningham & Hill, Ltd.
Toronto

HOTSTREAM
AUTOMATIC STORAGE
HEATERS

YOU DON'T USE THE OLD-FASHIONED GRAPHOPHONE TODAY—

NOR

SHOULD YOU USE OLD FASHIONED CATALOG METHODS

THE *OLD* WAY

THE *NEW* WAY

NOT so many years ago . . . in a day still remembered . . . the graphophone brought us the music of the masters . . . the beautiful songs of long ago . . . and the popular music of the day . . . and at that time it served the purpose . . . but compared with the marvelous radio of today . . . it was second-rate entertainment. And so we go along, improving both our way of living and our business methods.

In business, competition and economy demand that we present what we have to sell in the most efficient manner, and at the lowest possible cost. Modern business demands that products be made easy to buy and the men who do the buying must have most complete information. And most important, this information must be always easily accessible.

In our industry these requirements are met most completely by the Plumbing and Heating Catalog, nationally distributed to the select buying power of the industry, 5000 plumbing and heating contractors and more than 1400 wholesalers.

Compare the advertising value of your individual catalog, often misplaced or lost in an old-fashioned catalog file, with your catalog pages, presented to the most select buying power available in our industry, in one large book, constantly in use by the buyers.

Let us explain our Catalog Service, which relieves you entirely of the extensive labor of preparing your catalog . . . let us explain how the Big Orange Book reaches and retains preferred position in the hands of the most choice buying power in the industry.

DOMESTIC ENGINEERING

PLUMBING & HEATING CATALOG

1900 PRAIRIE AVE., CHICAGO

The new lavatory supply and waste planned for... today's plumbing market

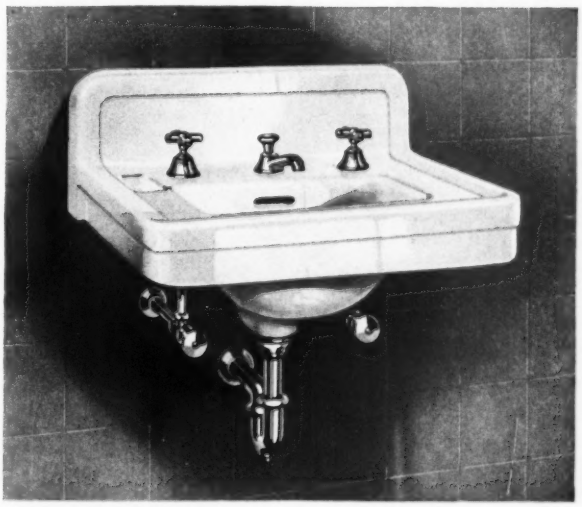
CRANE CO. announces a new lavatory combination supply and indirect lift pop-up waste . . . the *Rival.* Because it is heavier and better made, because it offers more refinements than other combinations which can be used on staple lavatories, it meets with unequalled completeness today's plumbing requirements of economy, quality, and convenience.

Its service is guaranteed by exact Crane engineering.

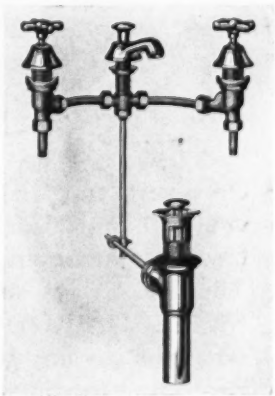
Here are the features to look for when you see the *Rival* at your Crane branch.

1. All operating parts, including seats, stems, and centerpieces are renewable from the top of the lavatory without disturbing valve bodies.
2. Internal threads in both metal and china escutcheons eliminate exposed escutcheon holders.
3. Large diameter stems and threads provide extra strength and smooth, easy operation. Bodies are heavy and have large areaways throughout.
4. Swivel discs permit closing valves tightly with minimum effort while reducing wear on discs and seats. Seats are renewable.
5. Liberal and simple adjustment on operating rod makes the *Rival* easy to assemble on different types of staple lavatories.
6. The ball on horizontal operating rod, works against a woven packing ring instead of against a metal seat. It is forced against this packing ring by a heavy spring; thus assuring minimum wear and a water tight connection.
7. The spout outlet is raised to prevent back-siphonage and to meet the requirements of progressive health departments.

Talk to your Crane branch manager about the *Rival.* Let him discuss with you the profitable modernizing market it opens when sold in connection with the Crane Budget Plan.



Crane Norwich *lavatory C 754-WM10 equipped with the* Rival *combination supply and indirect lift pop-up waste.*



C 32284-E Rival *combination supply and pop-up waste.*

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO
NEW YORK: 23 W. 44TH STREET
Branches and Sales Offices in One Hundred and Ninety Cities

CRANE

17-20-or-

-what have you!

On every trap in the "WISECO" Line you will find clearly stamped the manufacturer's name and the gauge of tubing. You are always sure when you specify "WISECO PRODUCTS" that you get what you pay for. It is an important added protection to you and your customer.

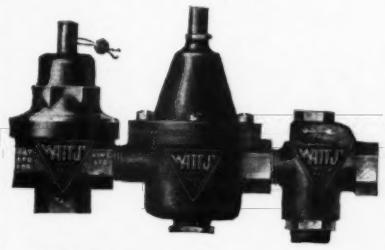
Think this over and insist on "WISECO PRODUCTS" in the future. Your jobber can supply you.

J. B. WISE, INC.

WATERTOWN :: NEW YORK

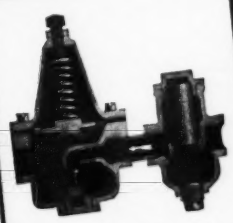
NEW YORK CHICAGO DETROIT PHILADELPHIA ATLANTA LOS ANGELES SEATTLE SAN FRANCISCO

THE STANDARD OF QUALITY SINCE 1877



Watts House Heating Unit, Type 38

Water Pressure Regulator, Type 23

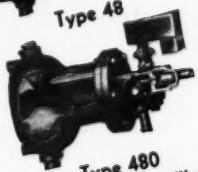


Water Pressure Regulator and Strainer, Type 23-S

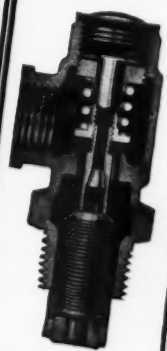
ONE GUARANTEE - ONE SERVICE - ONE 58 YEAR OLD FIRM BACK OF EVERY WATTS SPECIALTY

BOILER WATER FEEDERS

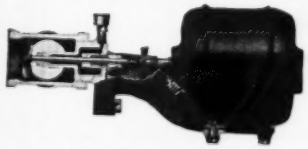
Type 48



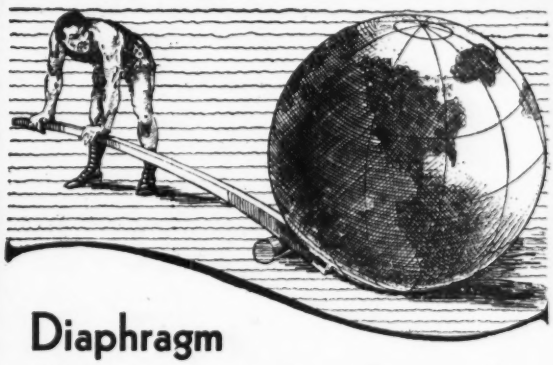
Type 480 Feeder with Low Water Cut-Off Switch



Autotherm Relief Valve, Type 40



Watts Water Circulator



Diaphragm Works on this Principle

The Greek scientist, Archimedes, said the earth could be lifted if you had a long enough lever. It is the application of this principle that enables us to use a phosphor-bronze spring 16 times heavier on our diaphragm. We therefore offer a leverage of 16 to 1. In Watts Diaphragm Relief Valves there is 16 times more effective area for opening than a corresponding pop relief valve.

The diaphragm has five plies laminated—four phosphor bronze and one monel—and each ply will withstand 150 lbs. pressure.

Sediment cannot settle on the valve seat, as the diaphragm and disc are away from the flow of water.

This bronze valve has nothing to rust—no loose or soldered parts to get loose—no guide wings to stick. And it is absolutely drip tight. *It is the only make calibrated so it can be set in the field for different pressures.*

It is listed as standard by the Underwriters and stamped A.S.M.E. Standard.

Write for our catalog No. 30.

Type 30 Pressure Relief Valve

WATTS REGULATOR CO.
249 Lowell St., Lawrence, Mass.

John G. Kelly, Inc., Distributors
210 E. 45th St., New York

WATTS

DIAPHRAGM RELIEF VALVES

Watts Regulator Co.
249 Lowell St., Lawrence, Mass.

Without obligation, please send a copy of your Catalog on

.....

Name.....

Address.....

City.....State.....

THE C-D-S WATERPROOF GASKETS

READY TO USE — NO HEAT REQUIRED

LEAVES NO STAIN ON FLOOR

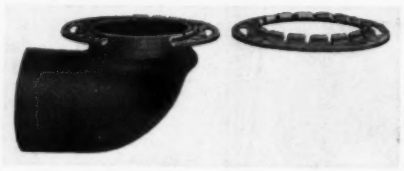
Get C-D-S Gaskets and Flanges

FOR BEST RESULTS

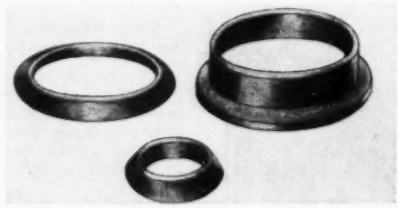
Plumbers everywhere are familiar with the Peter E. Snow waterproofing process, exclusively available in the C-D-S Closet Bowl Gasket. An assurance of a perfect leak-proof setting or re-setting to all closet bowl work.

C-D-S Gaskets eliminate the messing or guessing with putty or other makeshift gasket materials. Does not harden, break or rot.

The C-D-S Products Corporation manufactures gaskets of all kinds for every plumbing use. Closet spud, Pump, Hose, Slip joint, etc. These are available waterproof, Oil-proof or Char-proof (heat treated).



C-D-S Brass Closet Flange requires no lead pouring. Locks with a rigid grip permanently around pipe or bend.



Water, Oil or Char-proof Gaskets, any size or description, made to your specifications.

Look for the black bordered package and C-D-S trade mark. They are your assurance of quality products.

The C-D-S Brass Closet Flange requires no lead pouring. Solves for all time the problem of pipe or bowl slippage. Easily and quickly installed by driving down with a calking iron each prong until level. Thus, the Flange locks against the pipe or bend and is safe for the life of the job.

These C-D-S Brass Closet Flanges are packed complete with screws in individual cartons, shipped in lots of twelve.

Write for the name of your nearest jobber stocking C-D-S Products.

C-D-S PRODUCTS CORPORATION

GENERAL SALES OFFICE: 230 N. CANAL ST., CHICAGO, ILL.
FACTORY: MUNCIE, INDIANA

THE C-D-S WATERPROOF GASKETS

Old Stuff

won't sell this year

Any dealer who tried to sell this kind of lighting fixture this year would certainly be out of luck. People aren't buying old stuff, whether it's a chandelier, an automobile, or a pump.

That is why we designed an entirely new line of water system pumps . . . CID PUMPS, shallow and deep well, in all sizes.

We're offering dealers and distributors something new . . . not merely record-breaking low prices . . . but a combination of low prices and new features of design . . . and quality never found before in any pump.

The new features of CID PUMPS stand out like the new features of this year's automobiles. It takes new features to sell cars, and it takes new features to sell pumps. Let CID's new features help you to a good pump year. And let CID's national advertising build sales for you, as it is for thousands of other dealers.

AND OLD METHODS WON'T SELL, EITHER

DISTRIBUTORS: For the first time in the history of the pump business, the distributor is protected by a franchise that assures him the full support of the manufacturer and the full rewards of his sales effort. Goulds sales policy is clean-cut in this respect. It provides for exclusive territories, credit to the distributor for all business from his territory, established resale prices . . . all this, plus effective cooperation in selling.

Any policies that give the distributor less protection are old methods that have no place in the 1932 picture.

CID THE PUMP WITH RESERVE CAPACITY RESERVE POWER RESERVE STRENGTH

DEALERS: See your distributor or ask us about our profit-making dealer franchise.

GOULDS PUMPS INC... SENECA FALLS · NEW YORK

WORLD'S LARGEST PUMP SPECIALISTS

Here's How You Can Get In

RETAILERS in every line serving the home are co-operating in putting the "Spend for the Home" drive over.

Thus you have the advantage of tying in not only with the effort of thousands of other plumbing and heating contractors, but with furniture stores, building contractors, gift shops, brick yards and numerous other home retailing outlets.

You can join the "Spend for the Home" drive, too. Already hundreds of thousands of stickers, thousands of posters, hundreds of newspaper stories and ads, sales letters, etc., are at work in the plumbing and heating industry.

Get your supply of "Spend for the Home" material now. Put it to work. The cost is made trifling by DOMESTIC ENGINEERING or you can incorporate the "Spend for the Home" slogan in your selling effort without cost or obligation of any kind.

Get behind the "Spend for the Home" movement. Help it to help you.

GET your supply of this material today. Here are the prices of the window cards or posters, size, 8¼x12 inches.

The prices of these cards are as follows:

10 cards for 50 cents
25 cards for 75 cents
50 cards for $1.25
100 cards for 2.00
500 cards for 9.00
1000 cards for 17.00

We cannot undertake to ship less than 10 of these cards.

Stickers of the slogan, in the same design as shown above but of 1¼ in. x 2 in. proportions are also available. Order these stickers. Use them on your letterheads, envelopes, billheads, business cards, etc., etc.

The prices of the stickers are as follows:

1000 stickers for $1.50
2000 stickers for 2.50
5000 stickers for 5.00

Get a supply of cards and stickers now.

Electrotypes of various sized cuts of the slogan are also available. These can be had for one and two-color printing. Electrotypes are priced as follows:

Electro for one-color printing, 2¾x2⅝ in..... $0.35
Electro for two-color printing, 2¾x2⅝ in..... .65
Electro for one-color printing, 3½x5½ in..... .55
Electro for two-color printing, 3½x5½ in..... 1.00
Electro for one-color printing, size approximately 8x12 in..... 2.50
Electro for two-color printing, size approximately 8x12 in..... 4.50

Order what you need to get in on this big drive now.

DOMESTIC ENGINEERING, 1900 PRAIRIE AVE., CHICAGO

AQUA-MATIC CONTROL

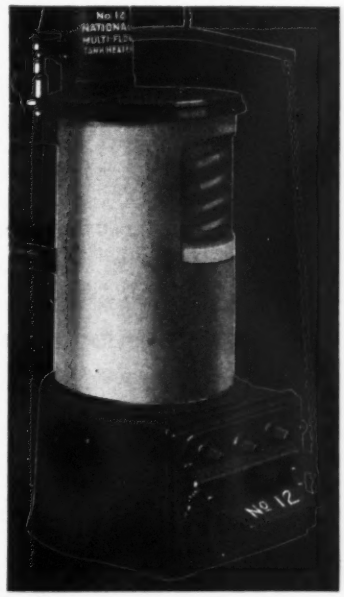
Tends fire for 2 to 3 Days... With one fueling

in the average home

Gives 150° hot water every hour of the day and night. Low cost operation; burns coal. Fire brick combustion chamber, holds heat. Copper coil absorbs heat faster, gives rapid circulation. Bronze fittings—clean hot water—ideal heater for use with brass hot water lines. Made in 3 sizes. Good margin of profit on heater and installation. Write us or see your jobber.

150° Hot Water 24 HOURS PER DAY

THE NATIONAL PIPE BENDING COMPANY, INC., 1883
NEW HAVEN, CONN.
SOLD BY THE LEADING JOBBERS



HOOKS UP IN COMBINATION WITH RADIATOR TO HEAT ROOMS

NATIONAL MULTI FLOW TANK HEATERS

ALSO INSTANTANEOUS AND STORAGE HEATERS

HE WAS A SUCCESS BACK IN THE GAY '90'S

This debonair contractor starting out for a hard day's work, wouldn't get very far today, competing with modern methods of handling piping jobs.

Muscle and ambition can't compete with high production pipe machines.

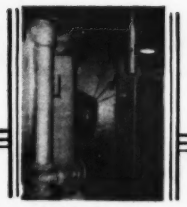
The contractor today with a "TOLEDO" No. 999 ½" to 2" portable power pipe machine, will accomplish more work in a day than 6 of these mustached mechanics of the gay '90's, and will do the work easier and better.

Ask us to tell you about the efficient "TOLEDO" No. 999. The machine that pays for itself by its savings.

THE TOLEDO PIPE THREADING MACHINE CO.
TOLEDO, OHIO **New York Office: 72 Lafayette St.**

"TOLEDO"
TRADE-MARK REGISTERED

LEAK-PROOF LIFE-TIME THREADS CONNECTIONS



BETWEEN OURSELVES

DOMESTIC ENGINEERING, APRIL 16, 1932

Readers Show Courage

READERS of DOMESTIC ENGINEERING have done a real service to the plumbing and heating industry during the past few weeks. By aggressively using the new sales weapon on lower material prices and lower labor charges, they have again shown that courage rather than complaints is what gets business.

Knock Down Price Argument

TAKE the New York dealer told about on the following pages. He had found that the price argument was the popular and obstinate one to be met. When material costs went down and then labor in many localities took its cut, he started after his list of customers and prospects. You will remember how these same pages of DOMESTIC ENGINEERING have brought you in the last two issues, actual copies of the letters which other successful contractors began to send out, late in February and right through March.

Refigures Old Estimates

IN addition to telling his list of the new, lower price schedule, this New York man added an idea of his own. He went back over his recent estimates, refigured them on the basis of the new prices and then wrote personal letters to each prospect. He gave in exact figures, the dollars which could be saved by ordering now. When his men called, they found nearly every one had saved that letter—a proof of their interest in his new proposal. And, as you learn in the article, he sold 10 heating jobs in 4 weeks.

New Methods in Plumbing

A FEW weeks ago, R. M. Starbuck visited a new state institution to inspect its plumbing system. He took with him a photographer to record for you those details of plumbing engineering which have value in your own installations. In the last issue, he told a part of his findings in an article on "Practical Points on Circuit Venting." This issue reports "How Hot Water is Piped for Two Miles." Later articles will tell of some of the novel plumbing features in this big job, of examples of poor economy in the running of roof pipes and the importance of watching small details in installing large water supply systems.

Leaders Tell What's Coming

"THE Future of the Plumbing and Heating Industry" is what everyone wants to know. As a step in finding the answer, the Central Supply Association last week called upon five leading manufacturers to tell what the future offers, based upon experience of the past and present. It was an unusual program which brought together as speakers, the presidents of the Crane Co., the Kohler Co. and James B. Clow & Sons, and the vice presidents of the Standard Sanitary Mfg. Co., and N. O. Nelson Mfg. Co. You will want to learn, as others did, what these leading executives think of the future of your business.

Installs Air Conditioning Plant

AIR conditioning as installed by a contractor brings you pointers on a subject of growing interest. This contractor set out to equip himself with the knowledge needed to put in a successful air conditioning plant and this issue brings you the report of some of his problems and the way they were met.

Serving a Big Field

PLUMBING and heating is a big business. It requires ability in many directions on the part of the contractor and dealer who makes his living in it. And for that reason, the trade publication which serves the field must provide a practical service in many directions. The preceding paragraphs cover only a few of the reasons why this issue is definitely helpful to so many readers. It represents the effort of a trained editorial staff to help bring greater business success to thousands of interested readers.

Your Editor

New Sales Drive Brings Contractor 10 Heating Jobs in 4 Weeks

Here is an example of prompt and successful use of the new sales weapon—lower prices for materials and labor. This heating dealer went after old and new customers to tell them of today's savings. He worked over his old estimates and told prospects just what savings would come from ordering now.

The last two issues of DOMESTIC ENGINEERING *have brought you many letters which successful contractors have been mailing to their prospects. This article reports how this aggressive sales effort of the contractors is getting business.*

TEN heating jobs in four weeks! That is the record of the Morris Home Heating Corporation, 125 Halstead Avenue, Harrison, N. Y. M. H. Engelson, secretary-treasurer of this firm, is a comparative newcomer to the heating industry, having started his business in March, 1929, but his observations have been keen and his operations sound, so that he is using aggressive merchandising methods to stimulate his business and to keep it above the average, both in operation and in profit.

Speaking of profit—in spite of the depression; in spite of the fact that it now takes twice as many calls to close a contract as in ordinary times; in spite of the fact that competition in its particular locality has been extraordinarily active and of all kinds; in spite of the fact that its territory is not particularly densely populated; in spite of the fact that it must consequently go far afield for its prospects and with its selling efforts—the Morris Home Heating Corporation finds itself at the present time, ahead of last year's business, and with a good possibility that 1932 will be the biggest year it has yet enjoyed.

The new record of ten heating jobs sold in four weeks was accomplished by prompt response to an opportunity which has presented itself at the present moment. Due to present economic conditions, great reductions have been made in heating equipment from the manufacturers through the regular channels to the contractor. The Morris Home Heating Corporation not being satisfied to keep this reduction a matter of trade knowledge only, has broadcast it far and wide so that potential customers might see the advisability of purchasing now.

BREAKING DOWN PRICE ARGUMENT

Handling only well known and branded materials, it was an easy matter to get the co-operation of the manufacturers, with the result that the Morris Home Heating Corporation sent to a mailing list of a thousand, a broadside which not only announced the drastic reduction in prices for heating equipment, but also brought out forcefully the fact that these heating systems could be financed on exceedingly liberal terms.

The mailing of this broadside tended definitely to break down one of the most troublesome of all sales resistances, that of *price*. The canvasser employed by the Morris Home Heating Corporation, and the two salesmen, found that in a great number of instances the broadside had been read so that at least the prospect had a general idea of the subject to be discussed, with the result that prospects and leads were much easier to develop and contact.

The really inspirational part of the drive though, consisted in the writing of personal letters to the prospects to whom estimates had been made a few months previously. These estimates naturally were given before the final price reduction of materials, which was the cause of this particular drive, and the follow-up letters gave the difference between the old estimate and the new, and definitely showed the saving to be made by the customer by purchasing the equipment at this time. The percentage of jobs obtained in this way has been remarkably high, so that it proves beyond a reasonable doubt, the value of this particular method of acquainting somewhat cold prospects with the advantages to be gained through recent general price reductions.

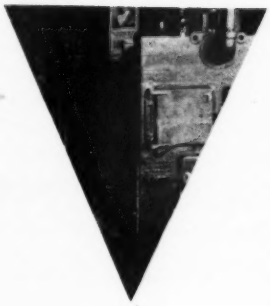
PROSPECTS KEEP LETTER ON SAVINGS

But even after these letters were mailed, it was necessary to make many personal calls on this particular list, and in almost every instance, it was learned that the prospect at least had kept this follow-up letter. This proved more than passing interest, and showed the possibility of closing the sale.

In one letter that was sent, reference was made to the list of heating installations that had been completed by the Morris Home Heating Corporation, which appeared on the back of the broadside. This list of installations consisted of about 150 names and it was reasonably safe to assume that almost every one would see on it the name of some person with whom they were acquainted.

The orders tell the story.

Show window of Morris Home Heating Corp.



TELEPHONE PARK 4018

MORRIS HOME HEATING CORP.

HEATING CONTRACTORS

128 HALSTEAD AVENUE

HARRISON NEW YORK

January 7, 1932

Dear Madam:

The writer had the pleasure of interviewing you about a new hot water heating installation and owing to the present business conditions I can truthfully promise you a saving of at least $100.00 in comparison to what it would cost you a few months ago.

We have a very convenient time payment plan, which gives you 24 months in which to pay for the work done, and we use nothing but the best American Radiator Company radiators and boilers made.

Trusting that you may see your way clear of taking advantage of this wonderful opportunity,

Sincerely yours,

MORRIS HOME HEATING CORP.

ME/L

TELEPHONE PARK 4018

MORRIS HOME HEATING CORP.

HEATING CONTRACTORS

128 HALSTEAD AVENUE

HARRISON, NEW YORK

March 1, 1932

My dear Mrs:

I am writing these few lines to let you know that I have spoken to the heads of our organization, and have received permission from them to reduce the cost of the hot water installation in your home from $940.00 to $900.00.

Of course, I realize that unless suitable tenant comes along, you would not make the change, but if the proper party were to rent your apartment, I do not doubt in the least, but that the above figure would be an inducement for you to have the work done at this time.

If passing through Hastings during the next day or two I shall again stop in to see you.

Very truly yours,

LH/L

TELEPHONE PARK 4018

MORRIS HOME HEATING CORP.

HEATING CONTRACTORS

128 HALSTEAD AVENUE

HARRISON, NEW YORK

March 11, 1932

Dear Sir:

Confirming our conversation of a week ago I am writing these few lines to let you know that the new price for the heating installation you contemplate making in the apartment house owned by you in Mt. Vernon will only hold good until April 1st.

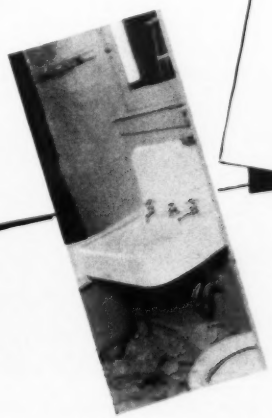
If you recall, the price I quoted you was $1500.00, which, you must admit, is almost $200.00 less than the original quotation and should be an inducement for you to have the work done at this time.

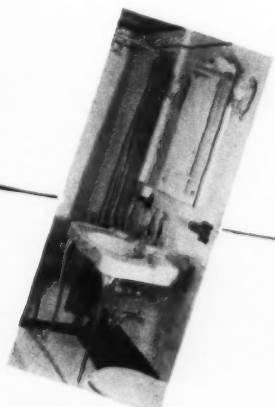
I shall again stop in and see you during the next few days and see you while passing through E. Irvington.

Yours very truly,

MORRIS HOME HEATING CORP.

LH/L





Some of the letters which brought ten heating jobs in four weeks

Domestic Hot Water Circulated Two Miles for Hospital Group

Practical Points on Plumbing Have Many General Applications

By R. M. STARBUCK

Early one morning last month, R. M. Starbuck and a Hartford photographer drove fifty miles to where the new Connecticut State hospital is now in the process of erection. They spent two days in going over the entire grounds. The result is a number of illustrated individual articles on the various interesting plumbing features which they found. Each article is complete in itself and this one tells how the domestic water supply is heated for seventy-four separate buildings. The hot water is circulated in pipe tunnels a distance of two miles, in the supply and return systems.

SEVENTY-FOUR separate buildings are planned for the new Fairfield State Hospital which the state of Connecticut is now constructing at Newton, Conn. The plumbing that enters into this number of separate structures and the plumbing that ties all of these units into one efficient plant present an abundance of interesting features and problems.

At the present time approximately 22 of the buildings are under construction. They make up units No. 1 and No. 2. The balance of the complete set of institutional buildings will be included in four or five additional units and the entire project covering a period of about six years.

The Fairfield State Hospital is an institution for the feeble-minded. The architect is Walter P. Crabtree of Hartford, Conn. The plumbing contractor for the first unit was M. J. Daly and Sons, Inc., of Waterbury, Conn., and for the second unit, The Wm. P. Kirk Co., Bridgeport, Conn.

The hospital grounds are located in one of the most beautiful hill sections of the state, commanding a view of many miles into a valley and onto the hills beyond.

The drawing, Fig. 3, will serve to show what has thus far been accomplished. This is a ground plan or plot plan, showing the buildings of the first and second units. The first unit buildings are shown in solid lines and the second unit buildings are shown in broken lines.

The power house is at the extreme left, and when the most distant building is constructed it will be a mile away from the power house.

When it is considered that all the heating and the supplying of all hot and cold water for domestic purposes is done from the power house, it will be seen that it involves the problem of carrying these three services through a distance of a mile.

The old-time method of providing housing for an institution was to put it all under one roof. That plan seems to have gone into the discard, along with so many other ideas of the past. Now we see hospitals, schools, etc. with a much larger number of buildings, spreading out over much larger areas. We believe one of the results obtained by this method is to provide for the inmates atmosphere and surroundings that are more natural, more like those of a home.

ALL BUILDINGS ARE LOW

In the case of the Fairfield State Hospital, the buildings are all low, none of them over 2½ stories high.

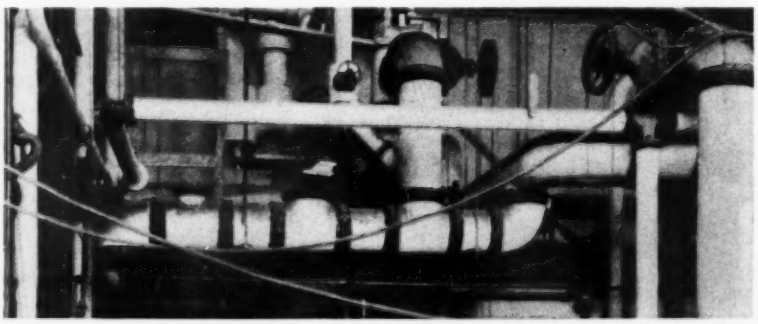


Fig. 1—The 6-in. hot water supply main from the instantaneous heater is shown in this view

The buildings selected for the first unit were those on which the operation and maintenance of the entire institution are dependent. There were included such buildings as the power house, laundry, fire station, repair and maintenance shops, administration building, dining hall and kitchen.

Fig. 2 gives a view showing some of the buildings in the first unit. The one in the foreground is the laundry, in the middle are seen three connecting buildings, which house the carpentry and mason's quarters and the painting shop. Furthest away are the power house and store house.

Owing to the peculiar location of these last two buildings, their sewage is not handled by the general sewage system, but is taken into a 300 gallon septic tank, thence into an underground absorption system, with final disposal into a brook at the rear of the buildings.

The power house is built into a side hill, with its drainage accumulating at a level probably about 50 ft. below the general level of the hospital grounds. If the use of the septic tank had not been decided upon, it would have been necessary to raise all of the power house drainage into the gravity sewer by separate pumping equipment.

The hot and cold water supply is one of the interesting features of this big undertaking. The cold water supply is a story in itself, which we will reserve for a second article.

The hot water for domestic purposes is to be generated by a battery of three instantaneous water heaters, located in the power house. Fig. 6 shows one of these heaters, supported on a steel framework.

Each heater has a heating capacity of 10,000 gallons per hour, heating from 40 to 180 deg. Fahr. with steam

Fig. 2—The photo above gives some idea as to the size of the various buildings and the distances between them. At the right is the laundry. In the center are three connected buildings which house the carpentry, painting and mason facilities. Still further at the left is the store house and at the extreme left is the power house. Compare this view with the building plans of Fig. 3 which are shown in light blue color

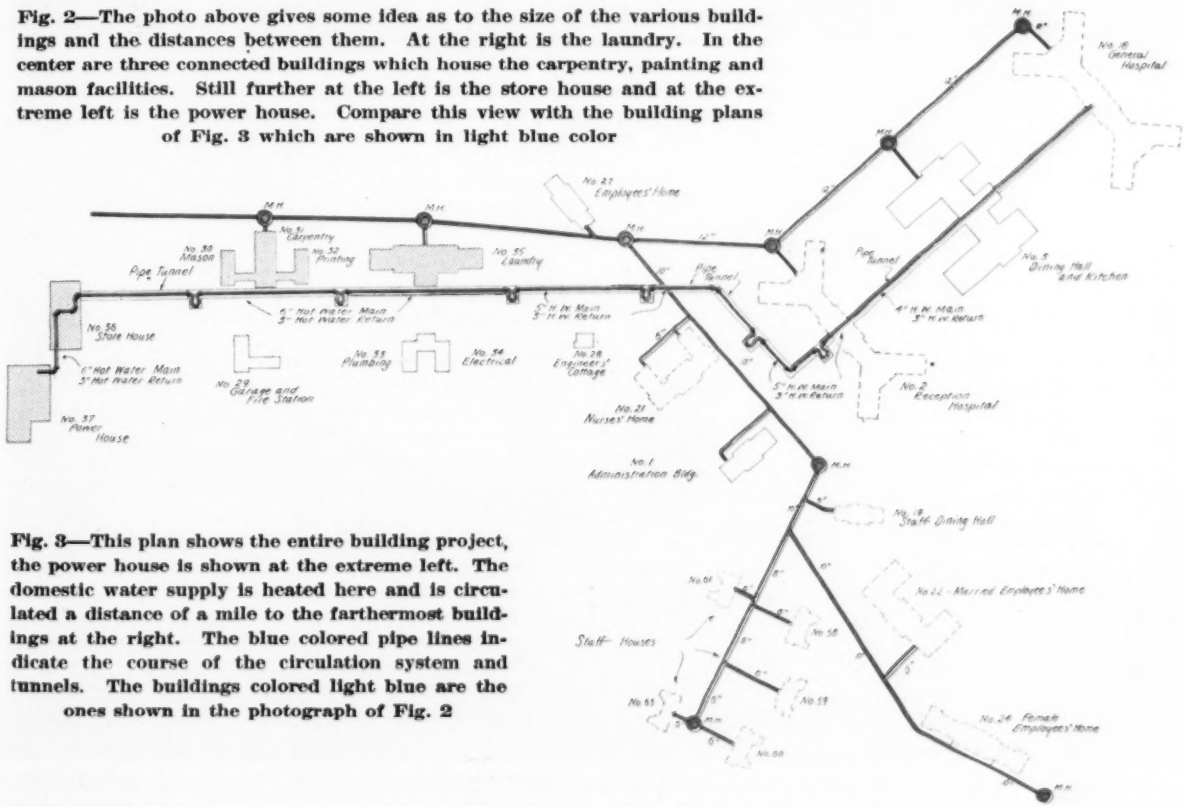


Fig. 3—This plan shows the entire building project, the power house is shown at the extreme left. The domestic water supply is heated here and is circulated a distance of a mile to the farthermost buildings at the right. The blue colored pipe lines indicate the course of the circulation system and tunnels. The buildings colored light blue are the ones shown in the photograph of Fig. 2

Fig. 4—Here is the roughing for the lavatories in private rooms. It is typical of what is found in the various buildings

at 5 lb. pressure. These heaters have automatic temperature control.

Inasmuch as a single heater is sufficient for present requirements, the two remaining units will not be installed until required.

Fig. 1 shows some of the details of the piping for the instantaneous water heaters. The pipe running at 45 degrees, near the center of the picture, is the branch flow pipe from the unit already installed. This pipe connects into the 6-in. main which runs horizontally. It will be noted that two plugged tees have been inserted in this line for the branches from the two units to be added later on.

The general course of this 6-in. hot water main is shown in Fig. 3. After leaving the power house, it is carried through the store house, and from that point through a concrete pipe tunnel, as shown in the drawing.

This main supply pipe is reduced in size as shown. The return or circulating pipe is 3 in. in diameter throughout.

THE MAIN SUPPLY LINE

The main hot water line is supported on the side of the concrete tunnel and below it is the return pipe. This support insures against sagging.

Throughout this undertaking, all hot water piping and all hot water return piping is of iron pipe size, red brass pipe, with cast brass steam fittings. Also, all cold water piping 3-in. or less in diameter is of brass.

All hot water piping, return hot water piping and cold water piping is covered with 1-in. thick pipe covering.

As will be seen from Fig. 3, an expansion loop is provided in both the hot water and the return mains at intervals of 100 ft. This is also done on all other hot water lines throughout the entire job.

BUILDINGS INTERCEPT TUNNELS

The drawing shows the hot water main passing directly through buildings No. 2, No. 3 and No. 18. Naturally, due to the elevation of the pipe tunnel, the tunnel ends at the foundation walls of each of these three buildings, the pipe being carried overhead through the basement, until it again enters the tunnel on the further side of the building.

When the first unit was installed, the circulating line was taken off and turned back, at building No. 3, the most distant building in that unit. When the second unit was constructed, both hot water and return lines were extended to building No. 18, the most distant building in that unit. Thus the tunnel with its pipes will continue to be extended as additional units are built.

We have not attempted in Fig. 3 to show the branches from the hot water main to the various buildings, but all buildings, including the staff houses are supplied from this one source.

There is nothing of unusual interest about the sewage

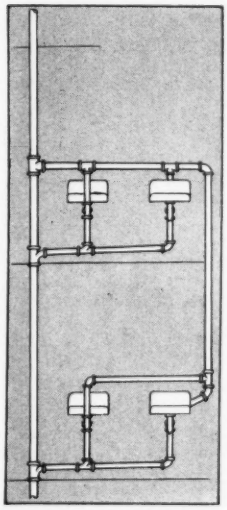


Fig. 5—This is an elevation of the complete lavatory stack showing the work on both first and second floors. Compare this with Fig. 7

system as shown in Fig. 3, except it should be stated that from the power house to the furthest limit of the hospital grounds, there is a gradual upgrade, which makes the sewage disposal a comparatively simple gravity problem, with a good pitch throughout its course.

In Fig. 4 is shown a view of the roughing for two lavatories in two adjoining rooms.

There are scores of just such layouts as shown in the foreground in this picture, in many of the buildings that are included in units No. 1 and No. 2, and we believe many additional buildings in future units will show a similar extensive use of the same layout.

The buildings in which this construction is used and that are already in course of construction are the employes' home, nurses' home, administration building, the two hospital buildings, female employes' building.

In Fig. 5 we show an elevation of the complete lavatory stack, showing the work on both first and second floors. The waste stack runs up into a high attic, where several similar stacks are brought together into a 4-in. pipe passing through the roof.

Our own judgment is that it might have been possible to so arrange the locations of these lavatories that in many instances they would come back to back. In that event the work could have been very greatly simplified, inasmuch as unit vents could have been used. If unit venting were used on both floors, these lavatory stacks would reduce to the simple layout shown in Fig. 7.

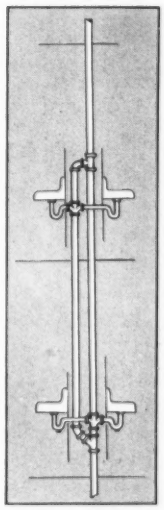


Fig. 7—If unit venting had been used in Fig. 5 lavatory piping would be as above

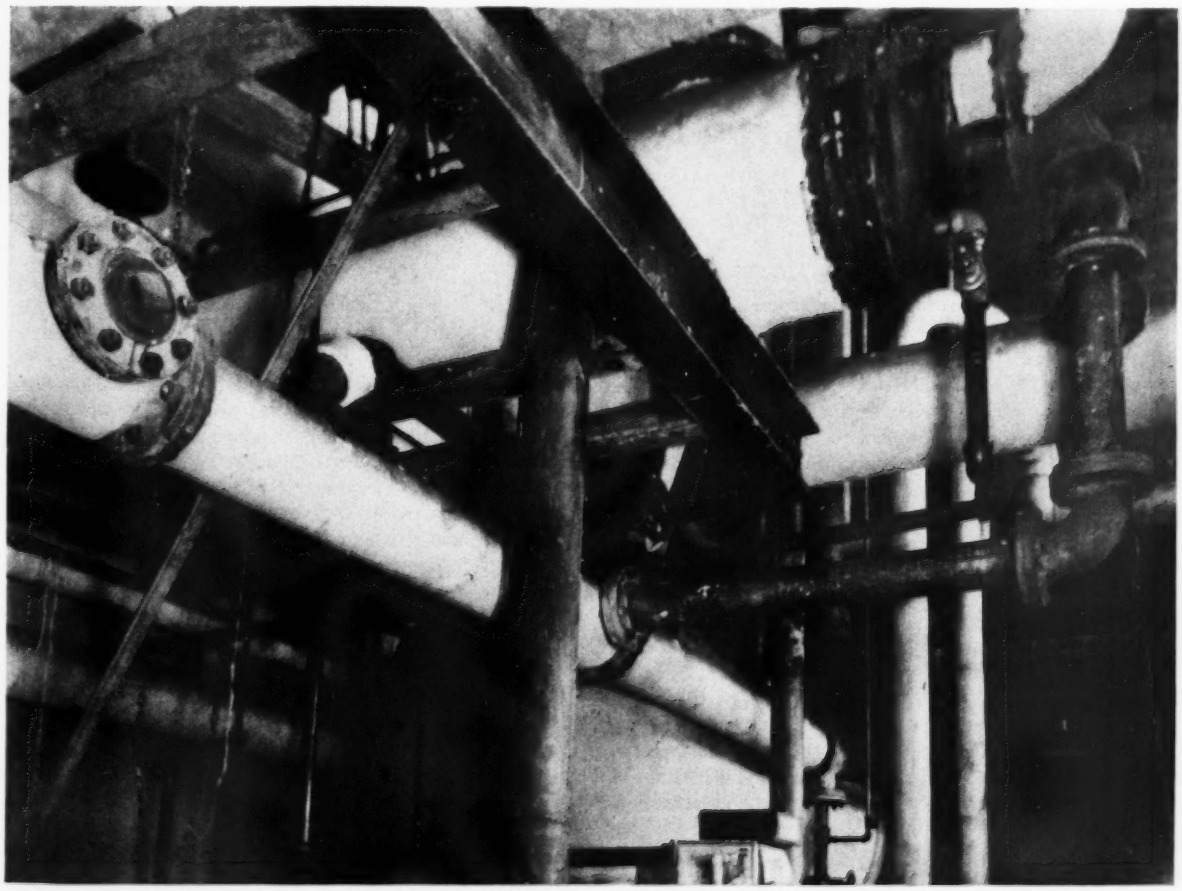


Fig. 6—This shows one of the three instantaneous hot water heaters supplying the domestic hot water supply requirements which were specified in the complete plans. The second and third heaters will be installed as the demands increase

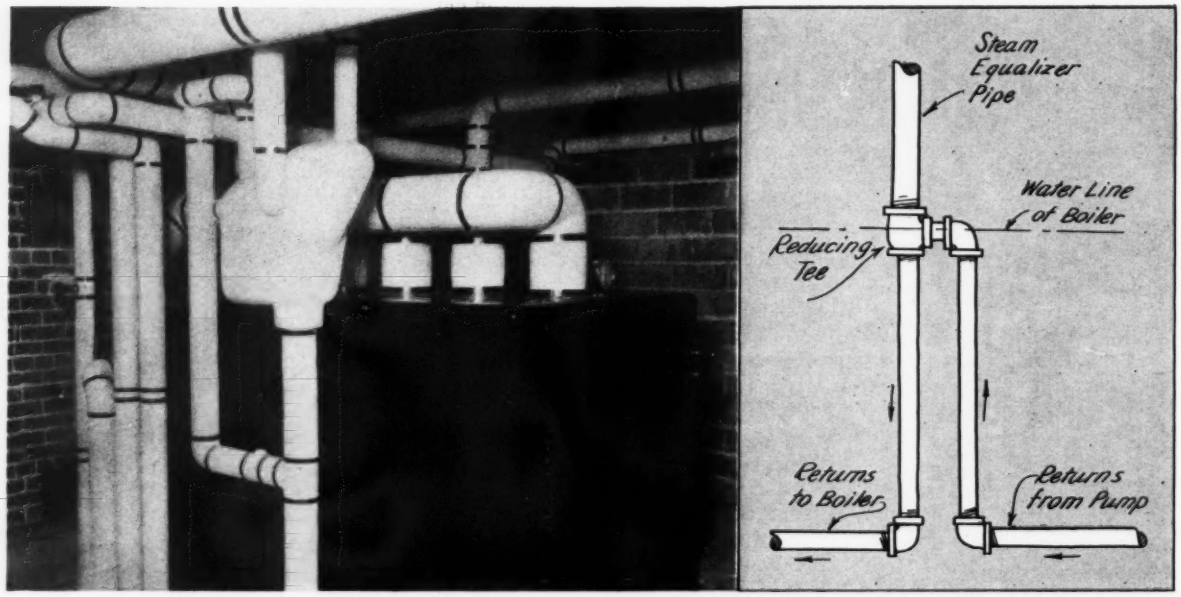


Fig. 1—At the right, the drawing shows an enlarged balancing pipe which sometimes occurs with the underwriters loop

Piping for Boiler Connections—Hartford Loop

By H. T. HALL

WHERE there is only one boiler to consider general practice seems to permit the distribution main or mains to form a continuation of the boiler header, as shown in Fig. 4, but where two or more boilers are set in battery the boiler header is most desirable and—if the distribution mains are connected to the header so as to alternate with the boiler connections, as illustrated in Fig. 3, the size of the header may be reduced from the size otherwise required owing to the fact that no part of the header carries the full or entire load.

An example of this is shown in Fig. 3 where it will be seen that if the loads on the four distribution mains are approximately equal, no part of the header would be carrying any more than the capacity of one boiler and that, in theory at least, the size of the boiler header in this case could be made the same as that of the boiler runout. On the other hand, if all the boiler runouts were hooked into the boiler header and then the header was carried over to another location where the distribution mains were branched off and valved, then the header at one point at least is carrying the entire combined boiler delivery and must be sized on the basis of three boilers instead of one.

The Underwriters loop is so superior to any other connections for returns to steam boilers that its use may now be regarded as practically standard. This loop is illustrated in Fig. 2 and simply consists of raising the return at the boiler to a point on the level with the water line of the boiler and at that high point connecting in the balancing pipe from the steam runout which previously has been mentioned and described. After this has been done the return is dropped straight down and is connected to the return tappings of the boiler. This produces in some instances a rather peculiar condition where a return pump or vacuum pump is in use to deliver the returns back to the boiler because the discharge from such a pump is relatively small compared to the size of the steam balancing pipe required by the schedule of the underwriters. Conditions sometimes arise where the pump discharge may be 2 in., or 2½ in., and the balance pipe must be 4 in. This gives a connection which appears as shown in Fig. 1. Part of this inconsistency is caused, of course, by the fact that boilers with a grate area only slightly in excess of 15 sq. ft., must have a 4-in. balance pipe while the pump return line size will be much smaller for this capacity boiler.

When more than a single boiler is to be provided with a return connection in which an Underwriters loop is to be incorporated the arrangement must be somewhat along the line illustrated in Fig. 6 owing to the fact that, under this condition, the boilers must have the characteristic of being able to operate either with both

boilers carrying the load or either of the two boilers carrying the load with the other boiler shut down. This means that the steam runout from each boiler must be separately valved and that the return connections must be so piped that the drips automatically will be thrown from one boiler—when it is closed off—into the other boiler which remains on.

This can be done with an arrangement such as is detailed in Fig. 6 where it will be seen that the returns coming back unite with the drip from the boiler header before passing through the valves controlling the flow of the return into each boiler. In this way the closing off of the boiler return valve will automatically throw both the returns and the drips into the opposite connection and, therefore, into the other boiler. If, however, the drip connection should be made to the return line close to the boiler and on the boiler side of the return valve, then a separate valve and by-pass must be placed on the drip so as to close this off from the boiler being closed down and to allow the drip to pass through the by-pass into the other boiler. All of this complication may be avoided by using the arrangement given in Fig. 6.

A great many jobs piped up some years ago do not have underwriters loops on the boilers but, instead, utilize a check valve in the return connections as illustrated in Fig. 3 but this is no longer considered as the best practice. It is subject to the criticism that the check valves are located in the lowest portion of the piping and in such a location are peculiarly prone to have dirt, scale, or other foreign matter get lodged on the seat so that the valve does not close tightly; also that the hydrostatic head required to lift the tongue of the check helps to back up the returns in the return line. It is true that such checks when properly operating will prevent the water from being suddenly driven out of the boiler when the pressure on the return is low but they do not prevent the water in the return collecting behind the check when higher boiler pressure holds the check closed against the entrance of the return. In this way the condensate ultimately collects in the return line.

There are a great many small jobs with a single boiler which are piped without any check on the return and which are giving perfect satisfaction in operation; usually these are systems where the sizes of the steam mains are ample so that there is little tendency for the return to be held back in the lines. Where two boilers are in use, however, it is possible to draw the water from one boiler to the other simply by stoking one boiler and not the other; that is if checks are not used. If the Underwriters loop is substituted in these cases, where trouble of such nature is encountered, all difficulties will disappear as it is impossible with this loop to back water out of the boiler to a point below the top of the loop.

The viewpoint of another engineer on the Hartford loop is on the following page.

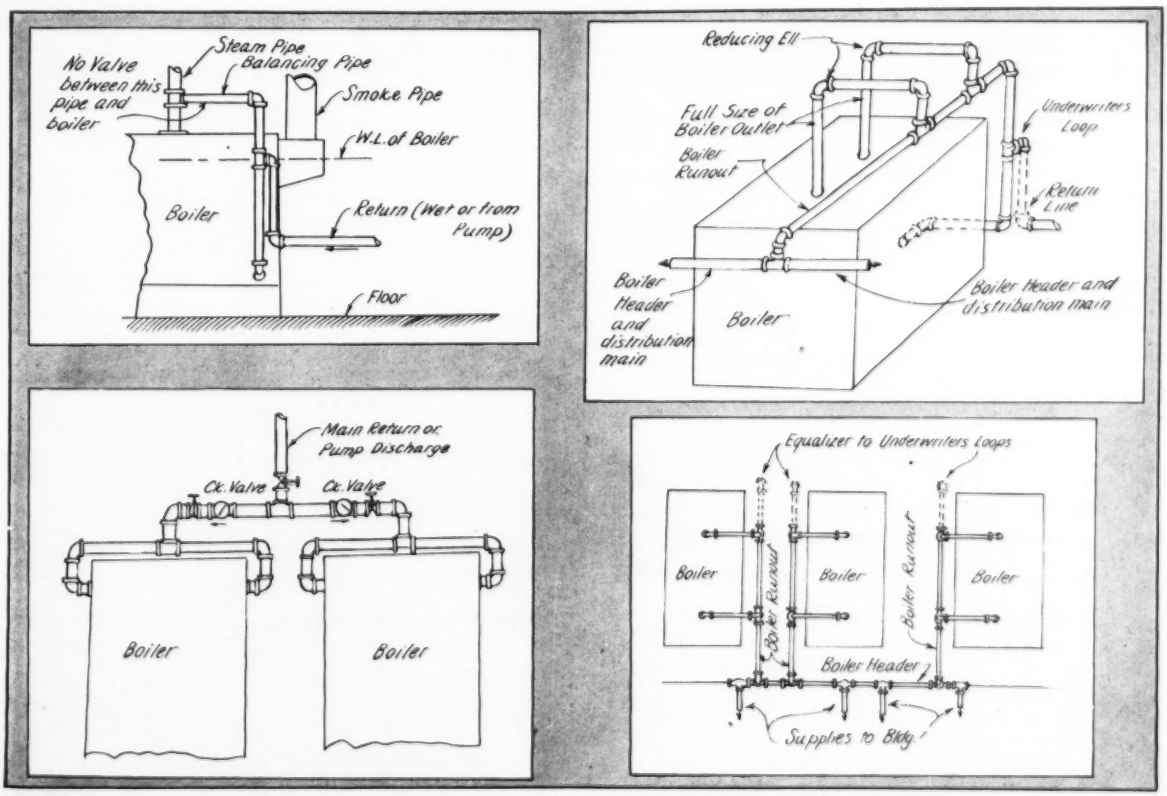


Fig. 2—The drawing at the upper left shows an application of underwriters loop on the return of a boiler

Fig. 3—The lower left drawing shows an old method of connecting returns to boilers using check valves instead of the underwriters loop

Fig. 4—At the upper right is shown the connecting of distribution mains on a single boiler

Fig. 5—Lower right, connecting distribution mains so as to alternate with boiler runout connections

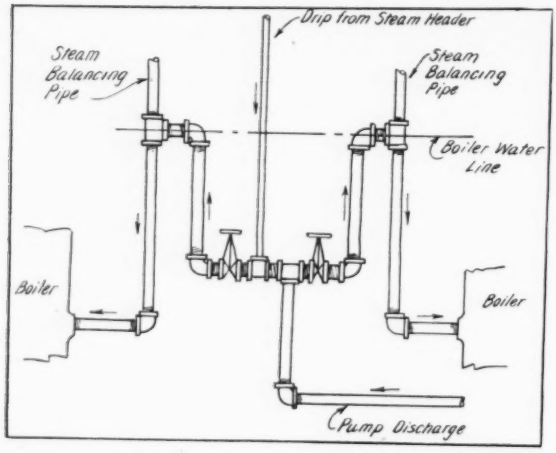


Fig. 6—Underwriters loop applied to two boilers

ANOTHER ENGINEER DISCUSSES HARTFORD LOOP

The highest point of the vertical run of the Hartford loop must be not lower than the lowest permissible water level, usually the bottom of the water gage glass. This lowest location may be measured to the top of the pipe, rather than the middle or bottom of the pipe. When the water level reaches the bottom of the horizontal connection at the top of the Hartford loop, no more water can leave the boiler. When this part is partially or wholly uncovered, water hammer noises occur, thus automatically calling attention to the low water condition.

Should steam be raised in a boiler equipped with a Hartford loop, when the steam line valve is closed and when the return line valve is open, all of the water in the boiler cannot be backed out but the steam can be backed into the return line. The steam pushes the water back and calls attention to the condition by vigorous hammering and possibly by blowing the safety valve. If attention is not given and if the fire keeps up, the water in the boiler will, of course, be boiled away and trouble will result, but this possibility will be greatly minimized by the preliminary warnings.

On account of the more positive manner in which the condensation is returned to the boiler, those installations equipped with return pumps perhaps do not need the loop arrangement as much as do the more usual gravity returns. However, with any plan of returning water to the boiler there is always the possibility of interference of some sort that will result in low water. Any means that calls attention to this condition is very desirable.

E. R. Fish, Chief Engineer, Boiler Division,
The Hartford Steam Boiler Inspection and Insurance Co.

Practical Problems in Mathematics

HOW TO FIGURE ROOF AREAS

ONE of the most important branches of mathematics which comes into every day plumbing and heating work is that of calculating surfaces. There are surfaces to be drained, to be painted, to be covered and to serve for the transmission of heat. All these must be reduced to some comparable basis for obtaining the quantity of water to be drained, the area to be painted or covered, or the amount of heating surface such as may be used as a basis for steel boiler capacity.

SURFACES

For example, a plumbing contractor desires to know what size of sewer will be required for a building—plan of which is given in Fig. 1—where his local code permits 9600 sq. ft. on an 8 in. pipe, 15,600 sq. ft. on a 10 in. pipe and 28,000 sq. ft. on a 12 in. pipe.

The easiest way to figure this roof surface is to figure the entire building as a solid block (including both front and rear open areas) and then subtract the front and rear open areas from the total. It easily will be seen that the width of the building across the front is

$$60 + 50 + 60 = 170 \text{ ft.}$$

and that the depth from front to back is 200 feet on one side and 150 feet on the other. If a distance of 150 ft. is laid off on the 200 ft. side a dotted line may be drawn across the back as shown at a-b in Fig. 2 making a perfect rectangle of the front portion, this being 170 ft. wide $\times$ 150 ft. deep.

Now in any rectangle the area is found by the formula

$$(1) \quad L \times W = A$$

where L is the length in feet (or inches)
W is the width in feet (or inches)
A is the area in square feet (or square inches)

so the area of the rectangle is

$$170 \times 150 \text{ or } 25{,}500 \text{ sq. ft.}$$

The roof area in this view is more simple to figure than the one considered in the example

Then going back to the rear end of the 200 ft. side another dotted line also parallel to the front of the building is drawn as shown at c-d, Fig. 2 making a second rectangle (a b d c) which is 50 ft. deep and 170 ft. long. The area of this rectangle by Formula (1) is

$$170 \times 50 \text{ or } 8500 \text{ sq. ft.}$$

but the rear line of the building cuts this area into two equal right angled triangles and only one of these triangles forms part of the building block. The area of any right angled triangle is found by taking the length of one short side, multiplying by the length of the other short side and dividing by 2: thus

$$(2) \quad \frac{B \times H = A}{2}$$

where B is length of one short side in feet (or inches)
H is length of other short side in feet (or inches)
A is area of triangle in square feet (or square inches)

From this it will be seen that the area a-b-c is

$$170 \times 50 \div 2 \text{ or } 4250 \text{ sq. ft.}$$

and, adding this to the previous area of 25,500 sq. ft., makes the total area for the building block

$$25{,}500 + 4{,}250 \text{ sq. ft.} = 29{,}750 \text{ sq. ft.}$$

This portion of the calculation may be shortened by first calculating the *average,* or *mean* depth of the building and simply multiplying this by the width. The average, or mean, depth is the depth on the axis (see Fig. 2) and may be obtained by adding the short side to the long side and dividing by 2. As a formula this becomes

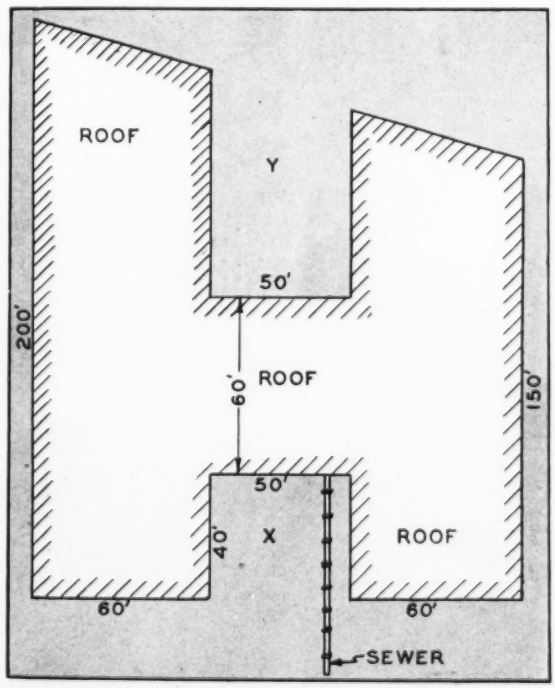


Fig. 1—This is the roof plan. The problem is to figure the area and size sewer for draining it

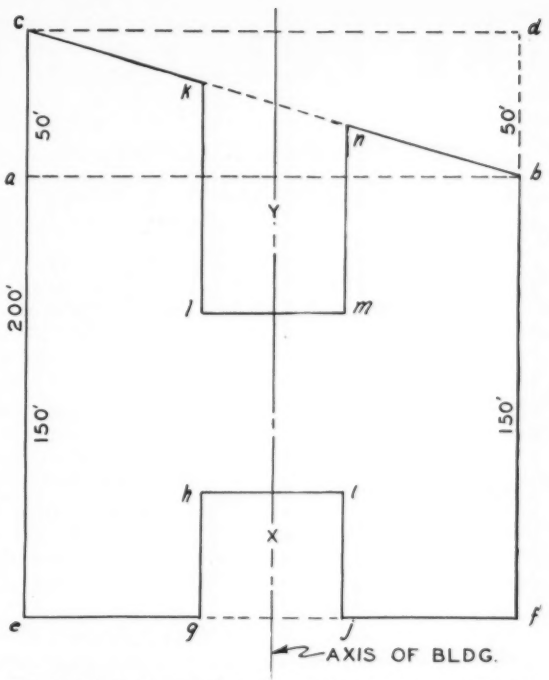


Fig. 2—This shows a logical way in which to divide the sections of the roof so as to calculate the areas. Other divisions might be made

$$(3) \quad \frac{ce + df = AS \text{ (Average depth.)}}{2}$$

where ce is long side in feet (or inches)
df is short side in feet (or inches)
AS is the average side or depth of building in feet (or inches)

Substituting, the figures become

$$\frac{200 + 150 = 175 \text{ ft.}}{2}$$

and the area c-e-f-b-c is

$$170 \times 175 \text{ or } 29{,}750 \text{ sq. ft.}$$

It will be seen that this method is considerably shorter than the other.

There now remains the matter of deducting the two areas k-l-m-n and g-h-i-j from the block to determine the net roof area. As g-h-i-j is simply a rectangle its area by formula (1) is

$$50 \times 40 = 2000 \text{ sq. ft.}$$

but k-l-m-n must have the average depth found which is the depth on the axis line. This is simple to do as the total depth on the axis line already has been found to be 175 ft. Out of this 175 ft. the front area "X" forms 40 ft. and the width of the building between the area "X" and area "Y" is 60 ft. making the depth of "Y" on the axis line

$$175 \text{ ft.} - (40 \text{ ft.} + 60 \text{ ft.})$$

or

$$175 \text{ ft.} - 100 \text{ ft. or } 75 \text{ ft.}$$

So the area of this surface again by formula (1) is

$$50 \text{ ft.} \times 75 \text{ ft. or } 3750 \text{ sq. ft.}$$

and the total to be deducted for both area "X" and area "Y" is

(Continued on Page 94)

The Future of Our Industry

By J. B. BERRYMAN, W. J. KOHLER, JOHN J. HALL, W. E. CLOW and A. B. PIERCE

The following abstracts are taken from addresses made April 6 at a meeting of the Central Supply Association:

By J. B. BERRYMAN,
President, Crane Co.

"WHILE we may be down in the dumps today we are not going to stay this way all the time. All history is against that," said John B. Berryman, president of Crane Co., Chicago, in his address before the convention covering methods of distribution and the question of economical distribution.

"My own opinion is," Mr. Berryman continued, "that we have reached the bottom of the hill. We are not going to have a good year in 1932. The first few months of the year will be the worst, but business will pick up as the year goes by."

He prefaced his address by emphasizing the importance of the plumbing and heating business, stating that it is the basis upon which the whole country is erected.

Mr. Berryman remarked that while there is a good deal of loose thinking regarding the future of the wholesaler, the latter will stay in business as long as he serves a useful purpose. "The manufacturer can not sell a single line direct to the contractor at a profit," Mr. Berryman said. He further stated that no manufacturer could handle the credit problem of 30,000 contractors, located in all parts of the country.

The speaker said that in the past few years the wholesaler has not received enough money for his services.

Talk of price cutting, Mr. Berryman remarked, is a loose term and means nothing. "What it does mean," he said, "is that the cutter is trying to establish a new market. He will either reform or eventually eliminate himself. But meeting his prices makes things even worse."

Mr. Berryman said he is not so disturbed over mail order competition. "It is their method of selling and not our method of selling. We are not retailers."

He expressed the opinion that the direct-to-you house "does not cut an awful lot of ice," adding that the solution lies with the plumber who should refuse to buy material from the direct-to-you.

Mr. Berryman remarked that the jobbing business is unsound because it has no base to stand on as it isn't making money. He quoted from the association's survey on the cost of doing business to show that the wholesaler is operating on too narrow margin of profit. He said that these wholesalers would have been better off if they had invested in good bonds.

"We have got to get the bunk out of this business," Mr. Berryman stated. "We must get down to earth—clean up this business and then we will make some money. Any wholesale house that can make 20 per cent gross should make money.

"Commodity prices have been slipping and slipping. Our company lost about $2,000,000 on inventory last year. I believe commodity values are stabilizing themselves, and as a whole, if they go anywhere, they should go upward."

By WALTER J. KOHLER,
President, Kohler Co.

MANUFACTURERS in America can be classified as those manufacturing articles of a consumable nature and those producing articles of capital or permanent value. The former group is more nearly depression-proof, for while their prices may have been lowered and their volume affected to an extent, still the consumption continues at a fairly uniform rate and the companies in this field are enabled to keep their overhead within reasonable bounds in relation to sales. On the contrary, the

J. B. Berryman

industries manufacturing goods of capital value—and this is the category in which our industry belongs—have been affected in a most menacing manner. Not only have prices depreciated severely, but in addition, and this is more disturbing, there has been an exceptionally drastic curtailment of demand. This almost prohibits the balancing of overhead in relation to reduced sales.

The average man is under the belief that the present depression began with the collapse of the stock market in November, 1929. Those engaged in this business know better, for the contracts on residential buildings on which the plumbing and heating industry mainly relies for its market, began to decline in dollar value in the midsummer of 1928. Taking the year 1928 as the basis there has since been a progressive decline in residential building contracts of 31 per cent in 1929, 60 per cent in 1930, and 71 per cent in 1931.

COSTS ARE STILL HIGH

It may appear superfluous to inject the comment that the margins of profit for the manufacturers in this industry are practically disappearing for the time being. Taking enameled ware as an example, manufacturers' prices are today on a basis equal to those of 1916, while costs have not been pared down correspondingly. Wages have been somewhat adjusted below peak rates, but are still relatively high. Some materials are much reduced in costs—copper being a notable instance—but certain major items are still too high. Freights applying to the populous sections are over 100 per cent higher than 1916, taxation has enormously increased, plants have large surplus capacity, and even with the most stringent economies directed towards the lessening of overhead that item of expense remains relatively excessive because of the sinking volume. Another changing factor increasing the manufacturer's clerical overhead is the smaller size and variety of the orders placed by the jobber with his source of supply—a large majority covering only single items, while carload orders are now about 5 per cent of what they were during active shipping periods.

W. J. Kohler

An analysis of the current marketing trends indicates that some manufacturers have in the past been absorbing a large part of the cost involved in the development of the plumbing industry. They have been carrying complete lines of their product in warehouses located for the convenience of some of the distributors. Furthermore, they have maintained expensive showrooms, have competed with each other in the writing of specifications and solicitation of individual business, and have borne an expensive annual burden of advertising.

Lately certain large manufacturers have received a request from a sectional plumbing association that the jobber be entirely eliminated as a distributor and the plumber be allowed to purchase direct. This desire was probably stimulated by the competition of the mail order and direct-to-you houses in that part of the country. While it may appear platitudinous, it is conceded that the method of direct merchandising is becoming more competitive and increasingly perturbing to those engaged in distributing through the orthodox channels.

Sales in the rural market, particularly those to the farmers, are practically all made by the direct-to-you agencies. The competition from this source in the cities is reported as becoming constantly more severe. Only one distinct advantage is enjoyed by the mail order group, and that is they are required to provide but one merchandising profit while the jobber to plumber arrangement necessitates two margins.

In the field of enameled plumbing ware about one-third of the manufacturers confine the sale of their product through the jobber and plumber.

TWO MARGINS OF PROFIT

All discussion how to successfully meet the mail order competition always leads ultimately to the plain but indisputable fact that in our method of merchandising two distributing margins of profit must be provided: One for the jobber and one for the plumber.

Although many master plumbers indicate a strong opposition to the direct method of merchandising, there seems to be no lack of mechanics to attend to the proper installation of the product sold by the mail order houses.

These companies conspicuously advertise the prices at which their plumbing and heating fixtures can be purchased and the investigating public is impressed by the ostensibly low costs of these products. This policy has not been followed by the regular manufacturers or those engaged in the jobbing or retail plumbing business, and hence there is a great uncertainty in the public consciousness because our consumer prices are treated secretively, and the houseowner apprehends the cost is excessive.

This acts as a deterrent to the logical development of the entire plumbing and heating business.

With every desire to benefit his distributors and no inclination on the part of the manufacturer to restrict

the earnings of the jobber or the plumber, it would seem that definite per cent covering both margins added to the manufacturer's price, the figures to the public to be openly advertised, would act as a stimulus to the business reached through the regular channels.

The question naturally arising to those analyzing the

A. B. Pierce

future of this industry is, are we facing a gradual but sure change in the method of distribution? In this connection one fact looms up as quite outstanding, however, and that is that the labor and material cost of manufacture must represent a greater share of the consumer's price than it has in the past.

We all have some information of the attempts being made in the small house field to be produced as a manufactured unit costing from $2,500 to $3,500. This is about the amount people of small income are limited to expend for housing, for it represents approximately twice their annual income, an investment beyond which they should not incur long-time obligations.

Much work must still be done before the ideal of a low-priced, attractive and comfortable home is available.

Newly built, adequately equipped housing has not been available to the population living within the third lowest income group.

It is becoming more and more recognized that housing for people of small incomes is one of the outstanding needs of America and offers an absorbing scope for practical engineers and financiers, as well as those socially minded.

To supply the needs of this group is a challenge to the ingenuity of American industry. I, for one, sincerely hope it will never have to be supplied through a paternalistic subsidy by government, for the cost would then be borne in increased taxation and be lost in a maze of officialdom.

From a residential standpoint America is not in danger of being overbuilt insofar as appropriate housing of its population is concerned, and I apprehend that there is no danger of reaching that stage for many years, or until all of the citizens have homes of the standards we believe should be America's.

To insure the fullest success of the Home Modernizing movement calls for the cordial, active cooperation of all major units identified with the building industry, such as the brick, cement, lumber, paint and other interests including our own.

There is one important phase of industrial development always imminent which causes especial concern to every manufacturer, and that is the supersedence of his

W. E. Clow

regular product by the introduction of new competing articles. Apparently this appears to be the affair only of the primary producer, but when the subject is analyzed in our industry the financial interests of the jobber and the plumber are also involved unless these groups extend their lines or enter new fields of distribution.

As an illustration, I refer to some of the latest housing units constructed where as a matter of course a substantially large combination apron kitchen sink would ordinarily be the usual installation. Today this type of house has a combination kitchen cabinet holding a small 20x24-

inch enameled cast iron flat rim sink, while the drain boards are of colored tile. The combination represents a greater cost to the house owner than the regular sink, and the sales value with consequent profit is considerably lower not only for the manufacturer, but for the jobber and retailer of plumbing goods as well.

A pollyanna view of the immediate future is not warranted nor is there cause for abject pessimism. While we hope we have passed the downward drag, it is time to face fundamental facts, drive sales in all possible ways, and endeavor to keep our overhead within as reasonable relation to sales as is practicable.

I believe there is cause for reasonable optimism if we, as a group, prove worthy of our responsibilities as managers.

By JOHN J. HALL,
Vice President, Standard Sanitary Mfg. Co.

JOHN J. HALL, vice president of Standard Sanitary Mfg. Co., Pittsburgh, Pa., pointed out that in 1931 new homes and apartments were constructed to take care of less than 100,000 families, and he added that in his opinion dwellings for not more than 60,000 families will be constructed this year.

Mr. Hall remarked that while there has been a great deal of talk as to the value and possibilities in modernization work, the plumbing and heating industry has not made the most of the opportunities that this field offers. He said the poor sanitary conditions in the urban sections of this country offer a tremendous market for the plumbing industry.

The speaker described sanitary conditions in Europe, stating that in a number of European countries business in plumbing materials has been increased by impressing the people of the danger to health where proper sanitary conditions are lacking. He said that in many of these countries the board of health regulates the equipment that is required. Mr. Hall said that in this country possibly too much time is spent in discussing business problems and debating on methods of distribution.

He reminded his hearers that a year ago the wholesalers claimed with lower manufacturers' prices they (the wholesalers) would be able to do a better selling job. The manufacturers have reduced their prices, Mr. Hall remarked, but added that nothing particular seems to have happened as a result.

Mr. Hall praised the efforts of the automobile manufacturers to lead the country out of the depression, and deplored the fact that the plumbing and heating industry, with a necessity to offer, is doing nothing in particular to create business. He said the industry must get busy and get its share of the dollars, for despite unemployment, money is being spent every day.

By W. E. CLOW,
President, James B. Clow & Sons.

W. E. CLOW, president of James B. Clow & Sons, Chicago, told an interesting story of his experiences of more than fifty years in the plumbing and heating business. His description of difficulties that were encountered in the earlier days indicated that the industry has encountered in the past even more discouraging and perplexing problems than those of today. Mr. Clow feels assured that the present problems will be solved and he is optimistic in regard to the future of the plumbing and heating business.

By A. B. PIERCE,
Executive Vice President, N. O. Nelson Mfg. Co.

A. B. PIERCE, executive vice president of the N. O. Nelson Mfg. Co., St. Louis, Mo., a past president of the Central Supply Association, expressed the opinion that certain business practices in the industry need serious consideration. He said the various branches of the industry are not co-operating as they should.

Mr. Pierce emphasized the importance of credit associations and said that when a man is on the cash list he should be so considered by all competitors. He cited a case with which he was familiar to show that in some cases manufacturers are not supporting wholesalers in credit matters.

Mr. Pierce explained that his company asks its manufacturing sources of supply "what is your sales policy?" to learn if they agree with his company's policy.

Mail order competition need not be feared, in the opinion of Mr. Pierce. He feels that there will always be plenty of business for members of the plumbing and heating industry.

"Housing for people of small incomes is one of the outstanding needs of America"

Opposes Direct Sales

By P. W. DONOGHUE

THE National Association of Master Plumbers is most emphatically opposed to the sale of plumbing fixtures and materials direct to the public by wholesalers, manufacturers, or any other source of supply other than the master plumber.

I wish to make this statement as strong, definite, and clear as I can possibly make it. It applies regardless of the sale being made with or without a commission for a contractor.

Why there should be any misunderstanding among any group of plumbing contractors, wholesalers, or manufacturers of this industry, I cannot understand.

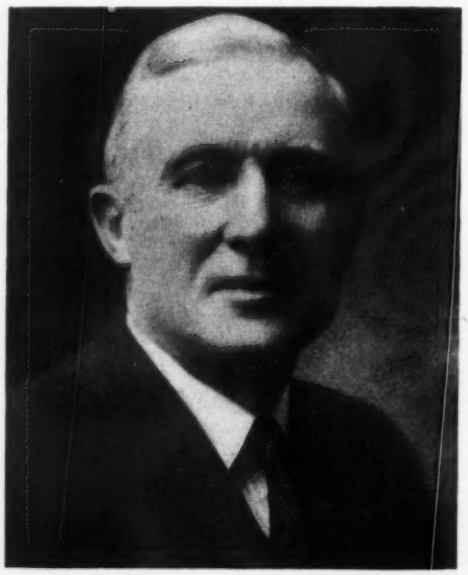
Yet, the letters which have been coming to the office of the president indicate that a misconception of the National Association's position on this important question does exist.

The National Association has never, throughout its 50 years of existence, made any exceptions or qualifications in its opinion on the sale of plumbing materials.

In an address which I made before the 37th annual convention of the Central Supply Association in Chicago on October 28, 1932, I said:

"The National Association of Master Plumbers believes that plumbing materials should be placed in the hands of the consumer through the retail branch of the industry—the master plumber; and the system of distribution of plumbing materials in force for the past fifty years should be adhered to; that is, from the manufacturer to the wholesaler to the master plumber.

"We see no benefit to the public in the manufacturer or the wholesaler selling plumbing materials direct to the consumer. This will not reduce the final cost; the only thing it can accomplish is to transfer operating costs from material sales to labor charges. We, as master plumbers, assume a responsibility and perform a service that the firm that sells material direct to the consumer without installing, neither performs nor assumes."



P. W. Donoghue, President, National Association of Master Plumbers

In view of this clear statement of the National Association's position and in view of the wide publicity which this statement received, it is difficult for me to understand how anyone could for a moment believe that the National Association would endorse any plan involving the sale of plumbing materials direct to the public by a wholesaler.

The fact that a commission may be reserved for the plumbing contractor by a wholesaler who makes a sale direct to the public makes no difference. We are opposed to all sales by wholesalers direct to the public, with or without commission.

In a letter dated December 21, 1931, to the entire membership of the National Association of Master Plumbers, in which I discussed somewhat at length the menace of direct-to-consumer sales as disclosed in the Cincinnati survey, I said:

"To maintain our position as the retail outlet of the plumbing industry, we believe it is necessary for the national manufacturer of plumbing fixtures and appliances, and the regular wholesaler in our industry, to co-operate in a movement that will reduce the cost of a staple line of fixtures and appliances to the master plumber. The master plumber must also assume his share of the burden by reducing his profit to the consumer on his staple line of goods.

"We believe that the fixtures sold under this plan should be limited in number to a few of the staple fixtures which are now being used as leaders by the direct-to-consumer concerns; such as, a five-foot bathtub on legs, a 21-inch lavatory, a wash-down closet outfit, a 42-inch drain board sink, and a small size tank gas water heater."

I pointed out that the exact amount of the mark-up which the contractor might make on these staples over and above the price he paid the wholesaler would be a matter of local adjustment. Naturally, the National Association makes no recommendations whatever regarding prices. If contractors and wholesalers in a certain city or district find a ten per cent mark-up on the staples just mentioned satisfactory, this is agreeable to the National Association.

Staples and staples only should be used as "leaders." In other words, the National Association has never intended that a small percentage of mark-up should apply to the entire line. Obviously the contractor could not exist on a ten per cent mark-up of all fixtures and fittings. Such a small mark-up would threaten his very existence. I trust, therefore, that I have made myself perfectly clear on these two important points:

1. The National Association of Master Plumbers is opposed to the sale of plumbing fixtures and equipment by wholesalers; and

2. The National Association of Master Plumbers advocates the use as "leaders" only on a few staple fixtures specifically mentioned in my letter of December 21, 1931.

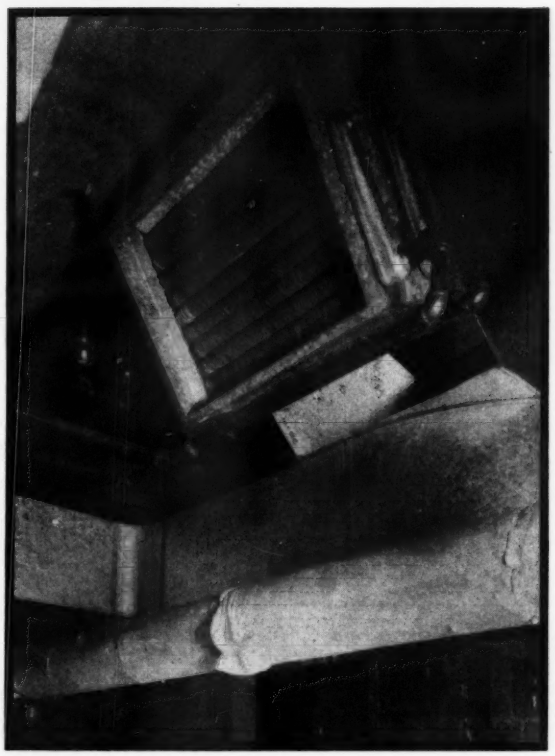


Fig. 1—This view shows the preheaters in the fresh air intake

Air Conditioning System Installed by Contractor

By J. HENRY HALLAM

THE growing demand for air conditioning in buildings, banks and residences is providing another fertile field for the heating contractor and Geo. W. Mitchell, president of Lloyd Mitchell, Inc., is making special efforts in that direction with marked success. Mr. Mitchell predicts that in the very near future practically all of the more expensive residences as well as the larger structures will be air conditioned. The heating contractor should prepare himself by study and facilities to engage in this type of work which is directly in the path of his expansion.

This firm in the past helped execute some minor work on the air conditioning of several of the large motion picture theatres. The main installations were done by help that had to be brought from outside the State. Seeing the possibilities they equipped themselves for air conditioning work and let it be known to the engineers and architects that they were in a position to engage in and practically execute an entire job. The response has been most gratifying.

In this article a job is described that was installed by this firm in its entirety including the duct work. The engineers on the job consulted with the contractor during the preparation and execution of the work because of their practical knowledge of the piping and the heating and plumbing involved.

The Union Trust Company, located on the northeast corner of Baltimore and St. Paul Streets in Baltimore, is the building in question. It is the first bank in that city to be completely equipped with air conditioning.

This bank, founded in 1795 as the Bank of Baltimore, is the third oldest bank in the United States, and is one year and seven days older than the City of Baltimore's charter. The same site has been occupied since 1795. This bank was recently merged with the Union Trust Company, and plans were carried out immediately for extensive alterations so as to thoroughly modernize the building. This included the installation of a system of air conditioning.

The building occupies a lot of approximately 76 ft. by 100 ft. and houses the main bank and general offices of the Union Trust Company. The north, south, and west walls of the building are exposed and the east wall adjoins the next building.

The spaces conditioned include the complete first floor which is the main banking department with desk space for the officials. The mezzanine floor includes the filing department at the north end, three private offices at the

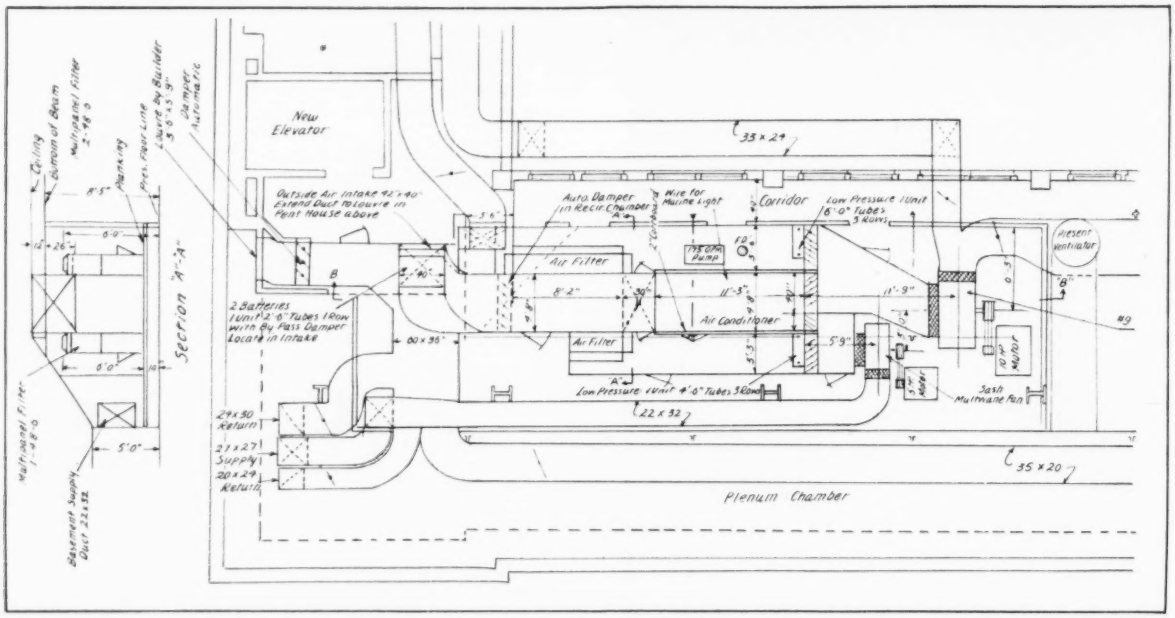

New Elevator
Outside Air Intake 92"x40" Extend Duct to Louvre in Pent House Above
Auto. Damper in Recir. Chamber
Wire for Mullion Light
Corridor
Low Pressure Unit 16'-0" Tubes 3 Rows
Present Ventilator
Air Filter
Pump
Air Conditioner
2 Batteries 1 Unit 2'-6" Tubes 1 Row With By Pass Damper Locate in Intake
Low Pressure Unit 4'-6" Tubes 3 Rows
Sash Multiple Fan
33 x 29
60 x 36
24 x 30 Return
21 x 27 Supply
20 x 29 Return
22 x 32
35 x 20
Plenum Chamber
SECTION A-A
Ceiling
Bottom of Beam
Multiple Filter
Basement Supply Duct 22 x 32

Fig. 2—Here is the general lay-out of the fan room equipment. It shows the dehumidifier, automatic dampers, fans, discharge and recirculating ducts, by-passes, fresh air intake and exhaust duct

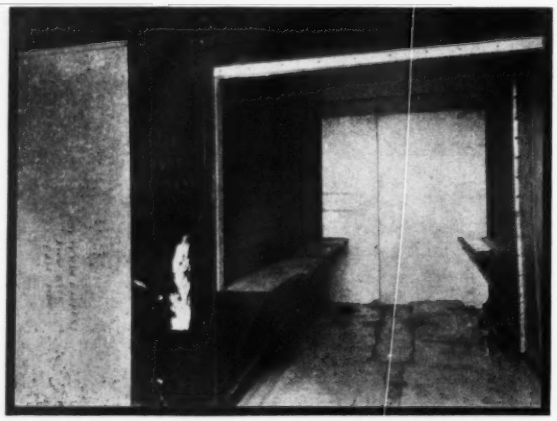


Fig. 3—This shows the recirculating chamber and the filters

south end and desk space for various officials at the east and west sides. The number of occupants and customers equal 125 persons. The light load amounts to thirty-three kilowatts for both spaces.

The basement floor includes the foreign, investment, trust and coupon departments and safe deposit vaults. The occupants and customers here total one hundred persons. The light load is seventeen kilowatts. The board of directors room with an estimated light load of 720 watts is occupied by approximately fifteen persons.

Revolving doors are installed at the outside entrances which are on the south and west sides of the building.

The operating guarantee provides that with an outside dry bulb temperature not exceeding 95 deg. Fahr. and an outside wet bulb temperature not exceeding 78 deg. Fahr., a temperature not exceeding 85 deg. Fahr. (dry bulb) and 40 per cent relative humidity shall be maintained in the conditioned spaces. Low limit controls were installed so that at no time will the temperature in these spaces drop below 70 deg. Fahr.

During the heating season the plant is used primarily for ventilating, using air from the outside to the full capacity of the dehumidifier and recirculating the remainder of the total handled by the fans. The dehumidifier is used as an air washer; automatic controls are installed for this operation to regulate the preheaters, reheaters, washer face dampers and reheater face dampers in the by-pass. The actual heating of the bank is done by concealed direct radiators and blast heaters which are thermostatically controlled by air valves to shut off at a temperature set two degrees below the temperature carried in the building. Steam for heating is supplied by the central heating plant of the Consolidated Gas & Electric Company of Baltimore.

The air conditioning plant controls are set so that the fan discharge temperature will be sufficiently high to take up the differences in the two degrees and maintain the proper relative humidity.

As an illustration, during the past heating season the system has been operating with direct heat controls set from 68 deg. Fahr. to 70 deg. Fahr. and the air conditioning plant was controlled to carry a dew point of approximately 44 deg. Fahr., and a discharge temperature at the fan of between 62 deg. Fahr. and 66 deg. Fahr. with the recirculating temperature from 72 deg. Fahr. to 74 deg. Fahr. The steam valves on the reheaters in the by-pass were controlled by a thermostat at the fan discharge and air which was by-passed through the reheaters was brought up to a temperature sufficiently high so that when mixed with air that was discharged through the dehumidifier, the mean temperature was not above 62 deg. Fahr. to 66 deg. Fahr.

The thermostat in the recirculating duct work also is connected to the reheater steam valve control for low limit control, so that if the recirculating conditions drop below 72 deg. Fahr. the steam valve opens, thus in-

creasing the temperature of the discharged air. The steam will remain on until the temperature goes up to a set point. The quantity of air passing through the washer and by-pass is controlled automatically by the same thermostat that controls the steam valve. The thermostat acts on the valve which controls the face dampers on the washer and reheaters. The dampers are synchronized and controlled by the same valve, one damper opening, the others closing. The valve which controls the steam supplied to the reheaters opens as the reheaters' face dampers open.

The first row tempering heaters in the fresh air intake are controlled by a quick acting steam valve through a thermostat placed in the fresh air duct set for 38 deg. Fahr. Second row heaters are controlled for dew point and temperature.

Operating in the above manner a temperature of 72 deg. Fahr. dry bulb has been carried and 56 deg. Fahr. wet bulb with a relative humidity of 37 per cent in the spaces conditioned.

For summer operation, with the refrigeration plant, the dew point control is set for 40 deg. Fahr. fan and the discharge temperature is set the same as in the heating season. The fresh air damper is set so that it is approximately 25 per cent open. The recirculated air makes up the balance of air discharged. The amount of air passing through the dehumidifier and the amount by-passed is controlled by face dampers on the washer and by-pass.

In addition to the above summer and winter operation in which the recirculating damper is set full open, arrangements have been made for mid-season operation under the following conditions:

(1) During the season when the outside wet bulb is sufficiently low (now above 48 deg.) but not low enough to permit of mixing recirculated air, the recirculating damper is closed and the fresh air damper is set full open. All fresh air is pulled through the washer and damper and the exhaust duct to the outside is opened. These two dampers are controlled by a three way switch which controls air valves on the dampers.

(Continued on Page 95)

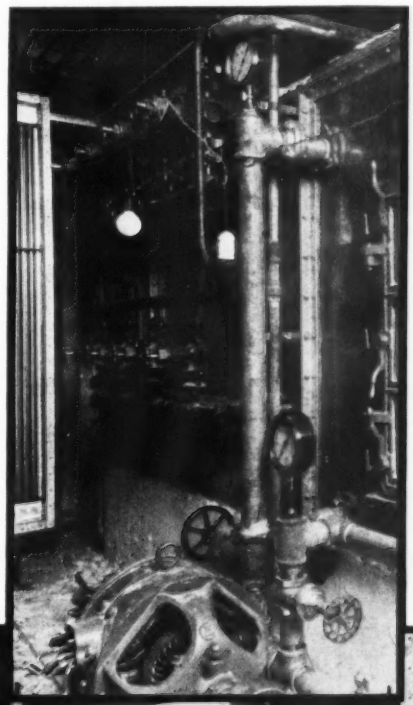


Fig. 4—At the right is the fan by-pass chamber showing the water circulating pump, the suction and liquid headers for CO_2 gas feeding coils in dehumidifier and the reheater and by-pass around same

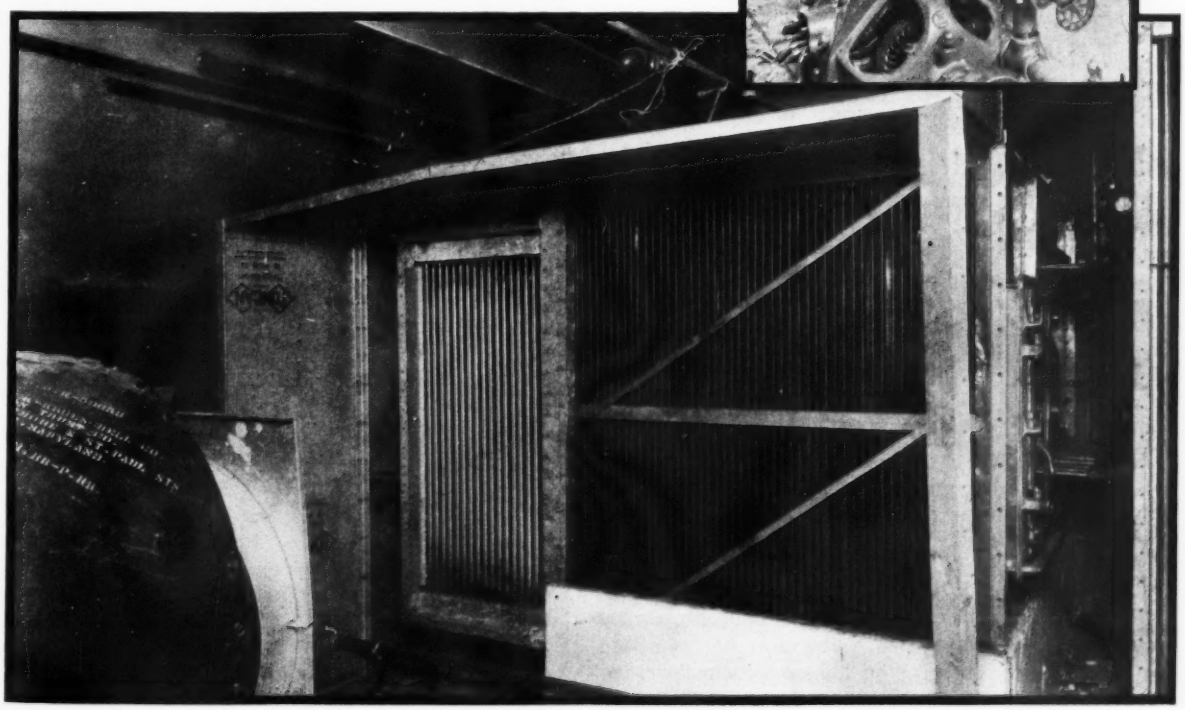


Fig. 5—Below is shown washer, discharge, eliminators, reheaters for No. 2 fan and by-pass at reheater for No. 1 fan

Prepare Now for Spring Refrigeration Business

By J. J. NANCE

IN GETTING ready for spring automatic refrigeration business, the new dealer has many essential preparations, if he is to realize the fullest possible profit out of his franchise. If he waits for the normal seasonal pick-up before he starts, he will never get properly organized until the buying peak is past and he has missed the big opportunity of the year.

Before setting about these preparations, the new dealer can well afford first to examine his own mental attitude. Is he embarking on this new project to make a few dollars with no extra effort? Or, is he depending upon this new business to make up for decreases in some of his other activities and so hold his entire operation upon a profitable basis?

Much depends upon this mental attitude. He will get no farther with automatic refrigerators than he will with any other line of merchandise, unless he first makes up his mind that this type of product will yield him profits only in proportion to the selling effort he puts forth.

Let this dealer first look about at what those in other lines of retailing are accomplishing. Then let him consider the tremendous public acceptance of modern refrigeration, let him remember that a round million were purchased last year and that an equal number will probably be purchased in 1932. Then, when he realizes the game is really worth the candle, he should be willing to make the extra preparations necessary for success during the ensuing months.

BIG SALES ARE EXPECTED

The new dealer should first learn all that is necessary about his product. He should familiarize himself with its particular sales features, determine which are of major importance and which of secondary appeal to prospects. He is going to encounter competition, plenty of it. And naturally the dealer with the best selling knowledge of his line, will be the one to get the biggest slice of business.

In getting started he will do well to follow carefully the sales plans and programs furnished him by the manufacturer. These plans and programs represent the best ideas and experience of hundreds of successful dealers. By following them he will not only avoid many costly mistakes and will profit directly by sound and productive methods.

Of course he will see that his refrigerator is prominently displayed. Because of its high unit cost, such a sale represents a good profit. Therefore he can afford to give it plenty of space on his sales room floor and in the display window. He will want to use the standard window display material provided by the manufacturer.

Direct mail has been found to be of great help in the refrigeration business. The aggressive dealer will see to it that there are a lot of names on his list and that they are getting these effective sales messages well before the buying season starts. Then when the salesman calls, the prospect will already have a good idea regarding the features and advantages of his refrigerator.

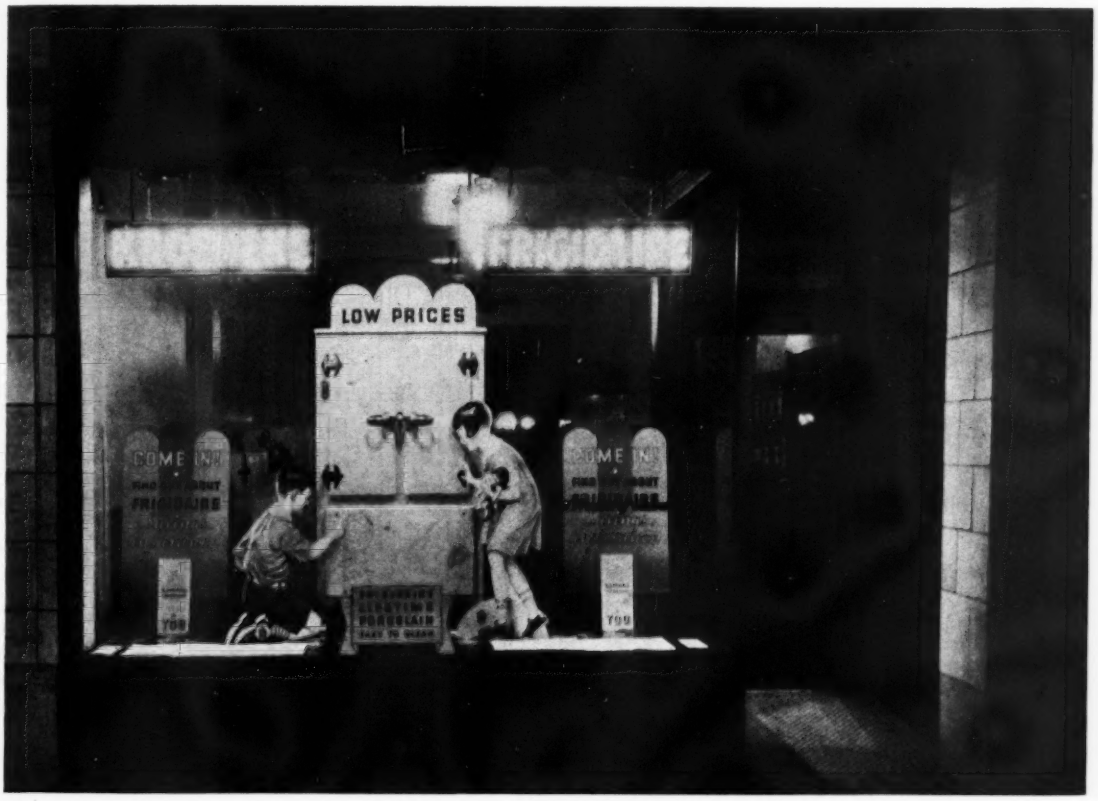
DEALER SHOULD START EARLY

Spring time is house cleaning time. The dealer should do his house cleaning early. This applies not only to the exterior and interior of his showroom or store, but to his sales equipment as well.

If he has been in the business for some time, he should hunt up his prospect file and then go out and have a talk with people who expect to "buy in the spring." Thus he will get rid of a lot of dead wood. He will see at once that he needs a lot of new prospects if he is going to get the quota he has been so confidently expecting. He will take steps to build up this prospect list immediately.

J. J. Nance, manager, Sales Planning Division, Frigidaire Corp.

Of course he expects to make a certain quota for the year. Only by so doing can he expect to realize a reasonable profit upon his time, space and efforts. But a year's quota is not sold in a month. It has to be sold, one installation at a time, all through the year. He must make necessarily a fixed number of sales each month, if he is to finish the year in satisfactory style.



"The dealer will see that his refrigerator is prominently displayed. He can afford to give it plenty of space on his salesroom floor and in the display window"

Therefore he should arrange that his salesmen make a certain number of calls each day, a certain number of demonstrations each week and this means night work. Fully half his sales will be closed after 6 p. m. He should by all means keep his display room open nights. By rights his salesmen should interview local users of his particular make of refrigerator each week. Here is the best possible source of prospects.

RE-JUDGE PROSPECT FILE

There are other things the dealer or salesman should do to organize for the serious work of closing prospects. He should re-judge every prospect card in his file.

If his line of merchandise has been extended downward in price range, he may attach new importance to prospects of a lower income strata. He should call on such prospects, present his new prices, use every legitimate means to get them into his showroom. A visitor in the showroom is not a prospect but a half-sold buyer!

The spring selling strategy is largely built around selling the superiority of a particular line. Suddenly the dealer finds himself competing with various other makes of refrigerators for the prospect's decision. Prospects are no longer "interested"—they are ready to choose. At this point the dealer or salesman must hit these "hot" prospects with all the convincing proofs at his command.

If a device could be perfected that would photograph mental impressions, such a photograph of a composite purchaser's mind would show a formidable hodge podge of impressions, doubts and convictions, regarding various makes of refrigerators.

However, this very mental hodge podge presents an opportunity for the best seller of any electric refrigerator. The very fact that the prospect has willingly gained so many impressions on the subject marks him promptly as not a prospect but as somebody's customer.

The salesman's task now becomes that of converting this dilemma of indecision and conflicting impressions into a well-reasoned choice, based on representative merits, features and values. He will have to demonstrate as never before. He will have to make vivid and appealing the particular advantages, superiorities and features of his refrigerator as he has never done before.

WORTH THE EFFORT

But it will be worth the effort. The public will buy hundreds of thousands of electric refrigerators in 1932. The dealer who knows his product, who follows instructions and works hard is going to get a comforting slice of a very profitable business!

The feature of the March meeting of the Western New York Chapter of the American Society of Heating and Ventilating Engineers was a discussion of the electrical development of the Niagara frontier. The speaker, A. G. Smith, general sales manager of the Buffalo General Electric Co., traced the development of A. C. current in the territory from 35 to 40 years back. The matter of rates came in for considerable discussion.

RETAIL ADVERTISING

Your Friends Will Notice

The change which you can make in your home by taking advantage of 1932 styles in the design of plumbing fixtures will add to your pride of ownership. It will mean added pleasure when you have guests or entertain over-night friends. The improved appearance will make your home mean more to every member of your family. And whenever you want to sell, every buyer will think more of your new plumbing than of any other change you can make. And prices are down, way down. A phone call will tell you how much.

(In this space Your Name, etc.)

A two-column newspaper ad

1932 Prices for 1932 Styles—

YOU want to save money now—we all do. And when you spend, you want to get the most for your money. Plumbing—at today's prices—offers you just that opportunity to save. And with the new style and attractive appearance of the 1932 designs you are getting more than ever for your money.

A phone call will bring us—without any obligation to you. Both prices and style will be a pleasant surprise.

(In this space Your Name, etc.)

A single column ad

Dear Madam:

Your home means more to you than almost any other thing you have. And an inexpensive improvement will make that home more attractive and more comfortable. We have a message for you which shows how inexpensively you can add to your pride in your home right now.

Your friends notice your plumbing fixtures, you notice their's. Your family wants and should have the best of plumbing conveniences to make the home more complete. And 1932 styles in plumbing design at the new schedule of 1932 prices puts the best in plumbing in reach of every home owner.

We have been in business, serving the home owners of this community for many years, and are now installing plumbing conveniences at the lowest prices in 16 years. In some cases, we submitted an estimate several months ago--and now we have gone back to tell our customers of the lower prices prevailing today. With material costs far down and with labor charges reduced, everything is in favor of the buyer.

A phone call brings you one of our competent men to tell you just how to fit these new designs and prices to your needs. Our phone number is ----

Very truly youre,
HARRY BROWN

A plumbing sales letter

The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING —without charge. If you wish to use the illustrations, they are sold at $4.20 for twelve —three months' service.

If you are using any of this copy, send us samples. We like to keep in touch with what our readers are doing.

SERVICE

Certain Comfort When You Return

NOW is a season when certain comfort from your heating plant is hard to secure—unless you have the new 1932 equipment. You will find a new sense of relief from the bothersome task of building and watching a fire—when you put this new automatic heating servant constantly on guard. Whether the days turn warm or cold, you will find when you return home that the temperature is just right. Today's prices are all to your advantage. We can send a competent heating engineer promptly to study what is best for your home.

(In this space Your Name, etc.)

For one-column space

Heating Comfort at All Times

When you leave home these uncertain spring days, you want to count upon your heating plant keeping your home at just the right temperature. Today may be warm, tomorrow may be chilly—and uncertainty about the weather means your home may be too warm on the warm day and too cold when it's chilly. With automatic heating, all this trouble disappears. You can select the temperature you want and find your home heated just as you like it. With no obligation to you, we will respond to your phone call by sending a qualified heating engineer to talk over your particular problem.

(In this space Your Name, etc.)

A two-column newspaper ad

BETTER VALUES FOR THE HOME OWNERS

"One thing sure about today's conditions is the added value which every home owner gets from his purchases now," says Harry Brown, prominent local plumbing and heating contractor.

"Two important changes have recently been made which are important to every home owner," he continues. "One is the decided reduction in price of the plumbing and heating items which he buys to add to the comfort and convenience of his home. The other is the great developments in style, in design and in service which make 1932 home conveniences do more than ever before to add to the pleasure both his family and his friends will get from his home.

"I have been in business many years," says Mr. Brown, "but never before have I been able to offer better material at as low a price. Those who take advantage of today's market are making a sound investment."

Hand this publicity item to your newspaper

Dear Madam:

When you leave your home today, either for a brief trip to the store or for the afternoon with your club, you can return to find it comfortable--that is, if you are taking advantage of the saving and convenience of automatic heat.

No need to bother about whether the fire has gone out and whether you will have to build a new one or wait till the menfolks come home to a cold house.

With automatic heat and automatic control, the heating plant does what you want it to do. The outside weather may vary--as it always does in spring--from warmth one day to chilliness the next --but your work is done when you set the temperature control.

Today's conveniences add so much to your pleasure in your home. And they come into your house at radically reduced prices. Better equipment at less money--and economy in the long run as your fuel savings come back to you day after day.

We are making these inexpensive conveniences work for others in your neighborhood. A phone call will bring one of our competent heating engineers. Without obligation, he will recommend just what changes will make your home more comfortable. Our phone number is ----------

Very truly yours,
HARRY BROWN

A heating sales letter

Heating in Residences and Small Structures

By H. L. ALT

VAPOR Heating should be distinguished from other forms of steam heating by the fact that the system should operate during the major portion of the time at a pressure below that of the atmosphere without the use of any pump or other power driven device to produce this vacuum or partial vacuum. The liberal interpretation of the term in the heating industry has broadened its meaning to include any steam system which operates either at a partial vacuum *or very close to the atmospheric pressure* without the use of a vacuum pump. Thus, under the broader meaning of the term vapor heating, a system which functions at one or two ounces of steam pressure would be included even though no vacuum or partial vacuum ever were present in the piping or radiators. This makes it a little difficult to set a hard and fast line as to where vapor heating starts and the other types of heating leave off.

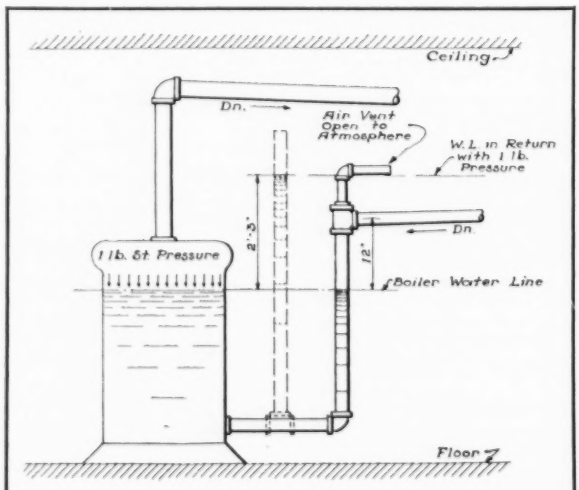


Fig. 38—Illustration of how water rises in return of vapor system with one pound pressure on the boiler

For example: vapor may be piped with either a one-pipe or a two-pipe system of piping so it cannot be distinguished from that angle. It may, or may not, have graduated supply valves on the radiator inlets so that does not serve as a guide either. It may, or may not, have thermostatic traps on the return end of the radiators. It may have an automatic return trap at the boiler to return the condensate against the boiler pressure when such exists but some vapor systems are operating without such return traps. It may have air relief valves on each radiator if it is a one-pipe vapor job but this is rather unusual. It may be installed with either a dry or wet return. Accordingly, it really is inadvisable to try and draw distinguishing features for vapor heating from any of the above items.

There are some characteristics, however, which belong peculiarly to vapor systems and the first and most important of these is that the system should normally—that is, in all but extreme outside temperatures—operate very closely to atmospheric pressure. This normal operating pressure may be a few ounces above the atmospheric pressure or it may be any number of inches of vacuum below atmospheric. When the pressure is above atmospheric it is said to operate at a slight *positive*

pressure while, if the pressure is below atmospheric, the system is said to operate at a slight *negative* pressure. Some systems are arranged so that in extreme weather a pressure as high as 2 lb. gage can be carried on the radiators and as much heat will be delivered by the radiators under this condition as with any other type of steam heating where the operating pressure does not exceed two pounds.

Other types of vapor heating add a slight amount of surface to the radiators to compensate for the lack of pressure and, also, when thermostatic traps are not used, to serve as condensing surface for any excess steam which otherwise might penetrate into the return lines and be lost. So it will be seen that one of the foremost requirements for a system to be included in the vapor heating catagory is that it shall normally operate during ordinary winter weather at a few ounces above or a few inches below atmospheric pressure. It may be well at this point to remark that atmospheric pressure is the normal pressure of the atmosphere or air in which we live and that this pressure usually is considered as 14.7 lb. per sq. in. although it varies slightly with the rise and fall of the barometer.

The next characteristic which a vapor system must possess is the faculty for operating without the use of any vacuum pump or other power-driven device to rid the return lines and radiators of water and air; the reason power-driven is stipulated is that some vapor systems do use an ejector device for air elimination and others use an automatic return trap to force the water back into the boiler when the pressure in the boiler is high, but the use of such devices do not prevent the system from being included in the vapor classification; it is only when power-driven equipment is used that the line is drawn. For example: the addition of a vacuum pump on the return line of a vapor system immediately changes the system into a vacuum system even though everything else remains absolutely the same.

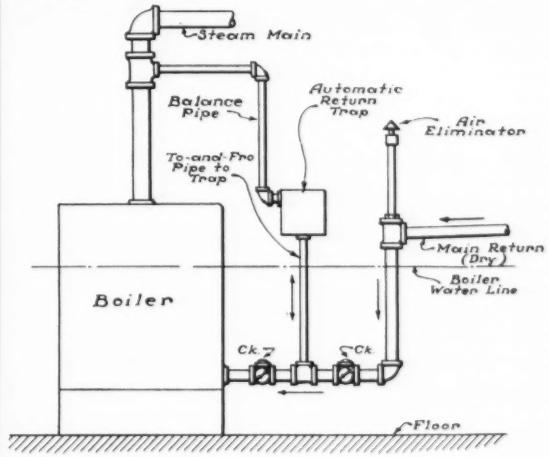


Fig. 40—Detail of automatic return trap connections

It is very easy to confuse a vapor system with an atmospheric system and some so-called vapor systems are so close to being atmospheric in their operation that either designation might well be applied with equal justice. An atmospheric system, however, is one in which atmospheric pressure is at all times present in the return lines. Usually it has several open vents to the atmosphere without devices to prevent the return of air, it may operate with any pressure on the steam side desired and it may or may not have a pump to handle the condensate and to force it back into the boiler. A vapor

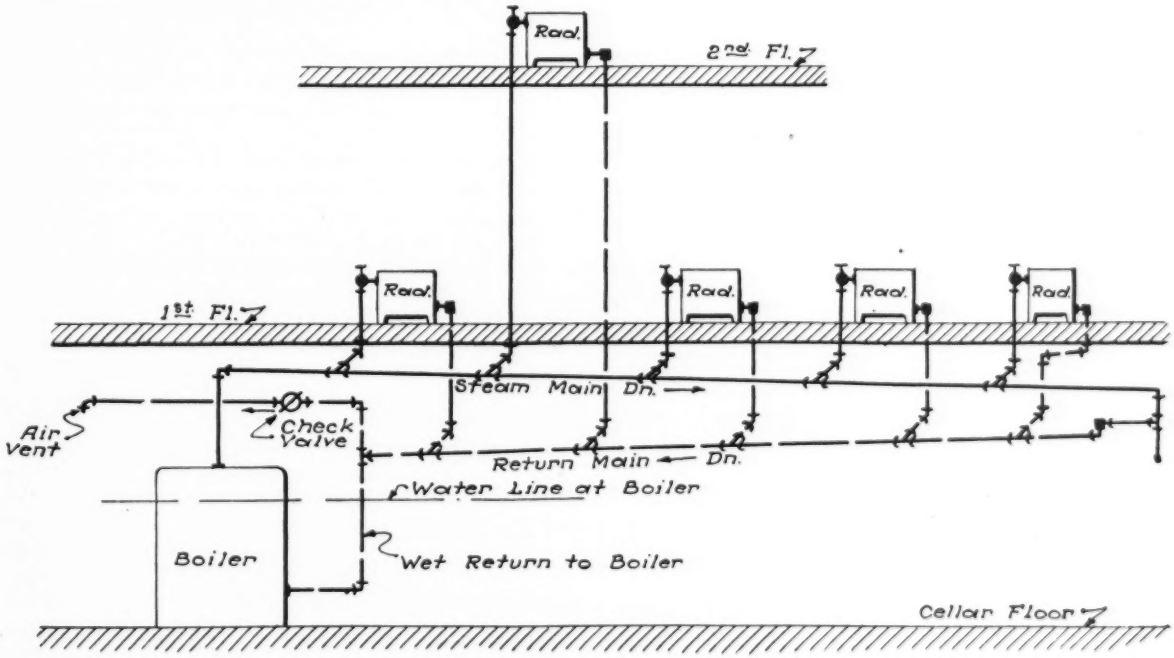


Fig. 39. Typical vapor steam system in its simplest form

system usually has only one air connection to the atmosphere and this connection usually is provided with some sort of a valve, check, or other device to prevent the return of the air and it cannot have a power-driven pump to return the condensation.

But the same general scheme of operations is approximated in all vapor systems and this can best be understood by referring to Fig. 39 which shows a typical vapor system arranged in its simplest form so that the principles of operation will be easily grasped.

In this system graduated supply valves are assumed to be used on the steam inlets to each radiator, thermostatic traps on the return connection for each radiator, and a thermostatic trap on the drip from the main steam header at the far end. In the air vent (connected to the return main before it drops down to enter the boiler) is placed a simple check valve with the tongue hanging at about a 15 degree angle so as to interpose as little obstruction as possible to passage of the air in an outward direction. When this system is started, a steam pressure is generated in the boiler, which must be a positive pressure, and which must be maintained long enough to force all of the air in the piping and radiators out through the air vent and past the check valve; after this has been accomplished and the system is thoroughly warmed up, the fire is allowed to go down and the steam is not produced in the boiler as fast as it is condensed in the system. As a result a partial vacuum is formed.

It will be seen from an inspection of the arrangement of a vapor system that the return is always open to the atmosphere unless the self-induced vacuum is strong enough to hold the check valve shut; in other words, when running as a pressure system, the return is open to the atmosphere but when the system is full of steam and a partial vacuum exists within the system, the return is not open to the outside. Under pressure operation, any pressure developed in the boiler has a tendency to lift up the water line in the return main in a manner similar to that previously explained for gravity one-pipe systems; except the difference that the lift of the water in the one-pipe system is practically confined to that necessary to counterbalance the pipe friction as the gravity one-pipe system is a closed system. In the vapor system the rise in the return is such as to counterbalance the entire boiler pressure. See Fig. 38.

This will be understood when it is considered that boiler pressure is exerted on both the top of the water in the boiler and the top of the water in the return in the gravity one-pipe system, but is exerted on the top of the water in the boiler only in the vapor system, atmospheric pressure being applied to the top of the water in the return due to the open check valve. This results in the necessity of keeping the dry return of the vapor system sufficiently above the boiler water line to accommodate this rise of water in accordance with the maximum steam pressure which it may be desired to carry in the vapor system. For example, if 2 lb. gage were considered as being sufficient for maximum extreme weather demands on a given vapor system, then the dry return would have to be kept at least

2 lb./0.43 or 5 ft. (almost)

above the level of the boiler water line in order to prevent flooding of the dry return main when this two pounds pressure is being generated by the boiler.

It is not always possible to do this and, besides, if the boiler pressure accidentally exceeds this limit of 2 lb. gage, the return main is flooded just the same, air binding results and all sorts of difficulties develop in operation. So the automatic return trap has been evolved to overcome this objection.

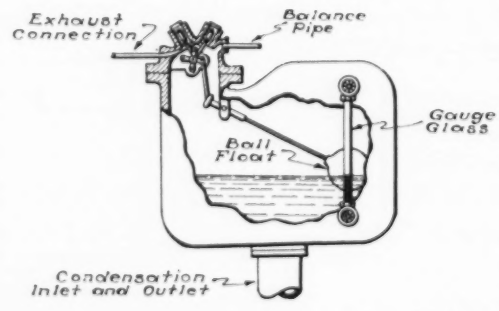


Fig. 41—Interior construction of typical automatic return trap

THE AUTOMATIC RETURN TRAP

Automatic return traps are constructed in a number of different types and styles but the principle on which most of them operate consists of the rising of the water in the trap lifting a float which admits boiler pressure into the top of the trap and thus equalizes the pressure on the top of the water in the trap with that on the top of the water in the boiler. As soon as this occurs, the water (being at a higher level in the trap than the water in the boiler) sinks down and enters the boiler. To prevent this water being blown back into the return main when the boiler pressure is applied in the trap a check is interposed between the return line and the trap, while the water in sinking down to enter the boiler passes through a second check so that (when the pressure is removed from the top of the trap) the water will not be blown back into the trap from the bottom of the boiler. A typical hookup of such a trap is shown in detail in Fig. 40.

Under normal conditions before the boiler has raised any amount of pressure the return water simply flows through the two checks into the boiler but as soon as the boiler pressure is sufficient to cause a backing of water out of the boiler it is prevented by the check valve closing against this flow and the higher the boiler pressure goes the more tightly this check valve is held shut; the returns coming back after the check next to the boiler has closed will naturally accumulate in the low end of the return main and gradually flood the receiving chamber of the trap; when the water line in the trap has reached a height sufficient to raise the float and to open the steam connection to the top of the trap the steam pressure from the boiler is then exerted on all the trap and the piping back to the first check on the return line—see Fig. 40. Then the water sinks down from the trap, passes through the second check and into the boiler. This causes the float to fall and cuts off the steam from the boiler so that the trap will again be ready to repeat the cycle. A detail showing the interior construction of a typical trap of this character is given in Fig. 41.

Interior view of the Ellis & McDonald store at Alliance, Ohio

Thirty-Seven Years of Success in the Plumbing Business

Ellis & McDonald—a reader of Domestic Engineering for many years—keeps pace with the expansion in industry

IN PREVIOUS issues we have published historical sketches of plumbing and heating concerns, which have for many years been constant readers of DOMESTIC ENGINEERING, such as Barr & Creelman Co. of Rochester, N. Y., and Barrett Hardware Co. of Joliet, Ill. In this article we shall record the achievements of the plumbing and heating firm of Ellis & McDonald of Alliance, Ohio, which has had its name on DOMESTIC ENGINEERING'S list of subscribers for more than 26 years.

In 1895, when the city of Alliance, Ohio, was first reaching beyond the infancy stage, two young and energetic plumbers selected the city as a place to set up in business. For thirty-seven years the firm of Ellis & McDonald has been a part of the city's growth. It has outlived all other concerns of its kind and now is the oldest plumbing and heating firm in the city.

STARTING IN BUSINESS

Alliance was the home of W. J. McDonald, but J. O. Ellis was from Cleveland. McDonald met Ellis while the two were at work on the Stark county courthouse at Canton, twenty miles west of Alliance, and he convinced Ellis that Alliance would be an ideal place for them to form and start a partnership in the plumbing industry.

Water and sewers were then being installed in Alliance for the first time and that meant unusual opportunities for plumbers. They decided to take a chance on making a business success in the thriving city and they established themselves in the basement of the building in which the company still is doing business.

FIRM IS INCORPORATED

In March, 1928, McDonald retired from the firm and the company was reorganized and incorporated. J. O. Ellis was elected president; Howard Ellis, vice president; Vera Carlstein, treasurer, and Mrs. V. L. Ellis, secretary.

Always anxious to keep pace with the growth of the city and the expansion of the industry, Ellis & McDonald subscribed for DOMESTIC ENGINEERING 26 years ago and the subscription has been renewed every year. Howard Ellis, who represents the second generation in his family in the firm, regards the magazine as the best in the industry and inherits the belief from his father, and he uses it as a guide in troublesome cases.

It has been a source of pleasure to watch DOMESTIC

ENGINEERING keep pace with the progress of the industry and follow it through the years with its timely and interesting articles and suggestions.

J. O. Ellis, although past 60 years of age, remains active in the business. He works about the store and shop and goes out onto jobs the same as when he was younger and first trying to gain for his firm a foothold in the city.

About eight years ago Howard Ellis gave up his practice of dentistry to join his father in the plumbing and heating business. The son, a college graduate, practiced his profession for several years and then chose instead a career which would give him more of an opportunity to be out-of-doors.

For many years, Ellis & McDonald have specialized in plumbing and heating sales and installations, but in recent years, keeping abreast with the industry, the company has expanded to include the merchandising of everything from plumbing supplies to electric refrigerators and similar equipment.

Over the 37-year period, the firm of Ellis & McDonald has done an average business of $50,000 to $60,000 yearly in a city of 23,000 population. Many of the largest blocks and residences in the city and surrounding community have been completely equipped by the concern.

When the World War was at its height, the United States government built 88 houses in one section of Alliance, and Ellis & McDonald were given the plumbing contract for the entire job. It was the largest single contract held by the company in its 37 years.

The Alliance City Hall, First National Bank, Peoples Bank, Crist Building, Eagles Hall and First Christian Church are among the other principal buildings of the city which Ellis & McDonald have outfitted. These are among the largest structures in the city and represent a majority of the largest plumbing contracts awarded in the city.

Many fine residences, of which Alliance has several, have been equipped by Ellis & McDonald. Included is the home of W. H. Purcell, president of the Alliance Machine Company.

KITCHEN SHOWS GREATEST DEVELOPMENT

In the opinion of Howard Ellis, the greatest development in the plumbing industry in the last 37 years has taken place in the kitchen equipment built for residences.

When Ellis & McDonald first went into business, little "dinky" sinks, as Howard Ellis terms them, were in use. They represented about all that "modern" plumbing had done for the world.

Now, no home is up-to-date unless in the kitchen there is a large sink, with adequate drains. No housewife is satisfied unless she has the latest in ranges, which with electricity and gas to operate them, stand in marked contrast to the old coal stoves which threw forth a torrid heat into the face of the cook as she bent over the pots and pans on the stove. Modern plumbing and heating has completely changed the atmosphere of the kitchen, Ellis points out.

Changes in bathroom fixtures also represent considerable departure from the noisy and unsightly looking equipment which plumbers were forced to install thirty or forty years ago. Instead of pedestal lavatories with an old zinc-lined box overhead, now there are one piece lavatories which bear clear and beautiful porcelain lining, making the bathroom one of the most valuable rooms in a dwelling. Similar advancement has been made in the construction of bathtubs, which until a few years ago, were zinc-lined but which, with the development of the industry, have taken on the porcelain covering.

Bathroom equipment now is being built into the wall, when possible. Architects are devoting time to the beautification of the room instead of passing it by as hurriedly as possible, when laying out homes.

Ellis also points out the fact that a few years ago one bathroom was nothing less than a luxury in a house and no one thought of installing two. Now, the most modern homes have a bathroom to every two rooms.

Great changes also have occurred in the heating of homes and buildings.

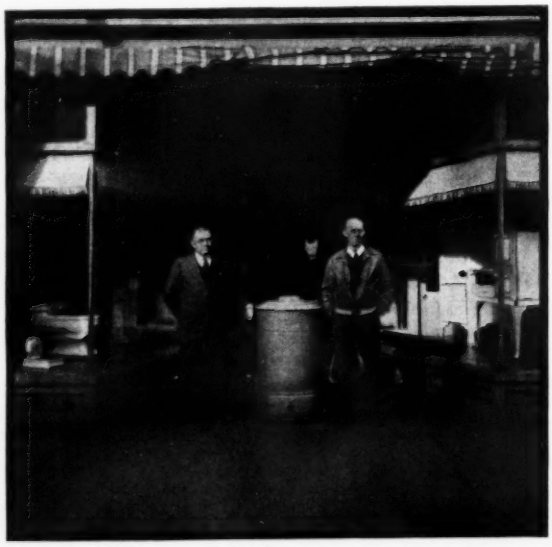
A COMPLETE SHOW ROOM

Some years ago, Ellis & McDonald outgrew the quarters occupied in the basement where they started business and the company moved a few doors away to their own building. Later, the building was leased and Ellis & McDonald moved back to the original building, but this time the showroom is on the ground floor.

The company maintains as complete a showroom as any plumbing concern in Alliance. It has an adequate shop.

Nearly every plumber in Alliance has worked for J. O. Ellis at some time. They either have received their start in the business from him or have been on the payroll of his company after learning the trade.

The firm of Ellis & McDonald takes pardonable pride in the fact that when a large business building was erected in Alliance within the last year, only one contractor was allowed to perform its work without furnishing bond—and that was Ellis & McDonald.



Entrance and part of the front view of the Ellis & McDonald plumbing store in Alliance, Ohio. At the left: J. O. Ellis, one of the founders of the firm. At the right: Howard Ellis, son of J. O. Ellis

OUR INDUSTRY

Separating the Contract

INCREASING support is being given throughout the plumbing and the heating and piping industries to the bill now in congress calling for the separation of plumbing and heating work from the general contract on government buildings.

Hearings were held at Washington a few days ago before the committee of the house of representatives which is studying the bill. Representatives of the Heating and Piping Contractors National Association, the National Association of Master Plumbers and the Electrical Guild of North America, were present and spoke. Because of the importance of having our readers familiar with the arguments favoring the bill, we are summarizing the points made by these witnesses.

The bill affects about 20 per cent of the appropriation for government buildings. By eliminating the brokerage fees charged by general contractors, the bill offers an opportunity for savings at a time when governmental expenses must be curtailed.

Because few general contractors have mechanical equipment departments, they must rely upon the experienced subcontractor. The government can have that same reliance without the payment of fees to the general contractor. No extra expense is involved, as the same inspection must be made in either case.

Also the governmental authorities would be dealing directly with responsible parties, so that any necessary adjustments needed when the mechanical equipment is placed in service, can be taken up with the contractor who installed it, rather than through a third party.

The bill would help the heating, plumbing and electrical industries by enabling the more responsible contractors to bid directly on federal work without competition from improperly financed men who are now able to bid through the general contractor. It would substitute governmental credit for that of the general contractor, which many times has proved an unstable support for the subcontractor.

Improvements in mechanical equipment and greater demands upon such services, have made the responsibility of the subcontractor much greater in recent years. Steam line pressures are much greater and temperatures are higher. Skilled plumbing installation is vital for the protection of the occupants of buildings and for all the residents of the cities in which these are built. Because of these added responsibilities, the government's best interests are met by turning to the skilled and qualified contractors in the mechanical industries to see that such equipment is properly installed and performs the services for which it is designed.

Experience in private work and on state work where separation of the contract is required, shows that satisfactory results are secured. With at least 50 per cent of such work done directly for the owner, it is evident that the government can subdivide its own contracts with full assurance of obtaining satisfactory results. And the savings promised by these witnesses who spoke for more than 300,000 contractors handling a business of approximately one billion dollars annually and employing 500,000 skilled workmen, is put at millions of dollars, both in first cost and in operating expenses.

The brief closes with a quotation from a resolution of the American Institute of Architects recommending "the adoption of the practice of direct letting of contracts for mechanical equipment, such as heating apparatus, plumbing and electrical equipment. This * * * serves more equitably the financial interests of both owner and contractor."

Various associations in the plumbing and heating field have recorded their approval of this bill known as Bill H. R. 9975. In the pressure of legislation, attention is given to bills which are supported and every contractor owes it to himself to write his congressman about the pending bill and urge support in getting the bill reported from committee and voted favorably on the floor of congress.

What the Future Offers

A CROWDED room of plumbing and heating men gathered in Chicago last week to hear five of the chief executives of the largest manufacturing and wholesaling companies talk on the future of this business.

At a time when business prophecies are in disrepute, the talks were not predictions. They were more properly analyses of past and present conditions as a guide to the future. These talks are summarized fully in preceding pages of this issue and you will find them interesting because of the frankness with which troublesome problems are talked about.

They may well be condensed into the statement that the price of progress must be paid in a willingness to adapt old methods to new demands. An industry as necessary to civilized life as plumbing and heating can be made a profitable one through conforming its equipment and services to the wishes of a public which has known too little about this industry.

Urge Support of Lien Law at New York Convention

THE 44th annual convention of the New York State Association of Master Plumbers, at the Hotel Pennsylvania, New York City, on April 5 and 6 was marked by a well planned program. The officers and members of the convention committee were rewarded by seeing an unusually large turnout, including many women. The ranks of the auxiliary were swelled by members of the newly formed auxiliaries of Greater New York. The convention was called to order by State President William Wolff of Brooklyn.

Matthew J. Kennedy, president of the Greater New York Association, delivered the address of welcome and the response to his address was made by George W. Frank of Buffalo, past state president. Fergus M. McLoughlin of New York City, also a past state president, gave the report of the convention committee. Mrs. Joseph O. Stapf of Albany, president of the New York State Women's Auxiliary, spoke briefly on the activities of the different auxiliaries throughout the state.

President Wolff called upon Mrs. Edith Ellis, master plumber of Detroit, Mich., and representative of the Detroit Plumbing school. Mrs. Ellis emphasized the importance of proper education of young men entering the plumbing industry.

President Wolff named William Foley of Queens, New York as reading clerk of the convention and also named the following committees:

Resolutions, George Arnone of the Bronx, August Ebke of Buffalo, Edward Snyder of Rochester and William P. Klebb of Baldwin. Credentials, Harry Sugarman of the Bronx, Floyd Sharp of Jamestown, Andrew Karl of Westchester and Joseph B. Brady of Brooklyn. Auditing, John D. Cooley of New York City, Edward Snyder of Rochester and J. L. Baker of Buffalo. Memorial, B. J. O'Donnell of Syracuse, P. H. Gleason of Brooklyn and A. J. Heinzle of Rochester. Sergeant-at-arms, P. J. Halloran of Brooklyn and Philip Eich of Manhattan.

A resolution was introduced by Harry Sugarman, chairman of the resolutions committee, on behalf of the New York Master Plumbers Association. This resolution embodied the principles set forth in National President P. W. Donoghue's letter of December 21, 1931, which was reported in a recent issue of DOMESTIC ENGINEERING. He also presented a resolution which in effect urged the members of the New York State Master Plumbers Association to support Bill No. 88 which is now before the legislative committee at Albany.

Henry J. Ritter of Buffalo, new president of New York Master Plumbers Association, and William V. Foley of Queens, new state vice president

The reports of the zone delegates showed progress during the past year. In reporting for Zone 2, Fred Schmalstich stated that Sullivan County had been added to Zone 2 and that this comprised an addition of five members. Joseph O. Stapf, reporting on Zone 3, stated that Mechanicsville had been added and that Poughkeepsie had been re-organized. Charles J. Nagle, speaking for Zone 4, pointed out that during the past year, members of Zone 4 had reached a co-operative arrangement with the Niagara Hudson Power and Light Co., on a dealer co-operation plan and that this was progessing with unusual success. James L. Baker, speaking for Zone 6, reviewed the formation of the Tri-County Association in southwestern New York and briefly sketched their activities up to the present. He also stated that good work had been done in this zone in Batavia, N. Y.

George H. Drake, Buffalo, national director and past national president, explained the bill calling for the separation of contracts. He also commended very highly Martin Utz of Rochester, chairman of the national conference committee, on the work that he has done in Washington on such activities as this bill of separation of contracts and other relative subjects. He sketched briefly the work in which the scholarship committee has been engaged. Mr. Drake also told of the work being carried on by the National association in bringing about co-operative arrangements between gas companies and master plumbers in the sale of gas appliances.

Walter S. L. Cleverdon, professor of sanitary engineering, New York University, gave an exhaustive talk on venting which was illustrated from the platform by three drawings showing typical venting lay-outs. Mr. Cleverdon's address will appear in full in a later issue of DOMESTIC ENGINEERING.

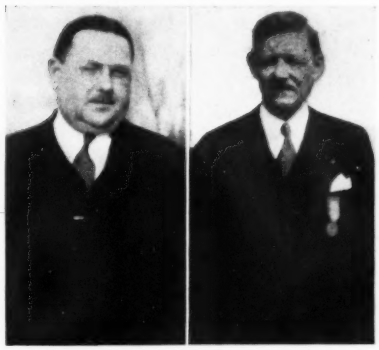
Jere L. Murphy of New York City, thanked Mr. Cleverdon for the information he gave the convention, and urged the delegates to study carefully all technical information that might pass through their hands to see that it was not erroneous to the extent that it might be misleading and have vicious results if by any chance it fell into the hands of the general public.

Harry Sugarman of the Bronx association stated from the floor that a resolution being presented to the Association on Codes would obviate all poorly designed and installed plumbing, and Andrew Karl of Westchester read a resolution to be presented which included county codes which, he stated, would cover all the difficulties met with in in-

dividual cities if it were adopted.

Hugh H. Cuthrell of the Brooklyn Union Gas Co. and chairman of the American Gas Association's trade relations committee, pledged the support of the public utilities insofar as they are able toward continued success and growth of dealer co-operation.

R. G. Bookhout, editor of the Plumbing and Heating Contractors Trade Journal, spoke on the importance of merchandising. He showed the processes through which it is necessary that the master plumber go in order to compete as a merchandising factor with other retail merchant dealers. T. Nolan, of Tarrytown, president of the Westchester Master Plumbers Association, suggested the founding of a testing laboratory for plumbing material and said that, if such a laboratory were founded it would be of considerable help to the master plumber who was trying to merchandise gas appliances. Mr. Nolan's suggestion brought forth considerable discussion. Jere L. Murphy stated that it had been his experience that manufacturers of plumbing equipment had their own testing laboratories in most cases and did not wish to abandon this idea.



W. Frank Clucas of Buffalo, elected financial recording secretary of New York association, and William Wolff of Brooklyn, retiring state president

A. A. Alles, Jr., secretary of Lien Law Revision and Enforcement Association, discussed the activities of his group and pointed out the advantages that the New York State lien laws give the master plumbers. He stated that it has now become the accepted practice for complaints which ordinarily went to the district attorney's office to be referred to the Lien Law Association for investigation. He pointed in particular to that section of the new law dealing with the fact that owners, contractors and sub-contractors must now keep books showing the accounts receivable and payable and names and addresses of those with whom transactions are carried on.

He reviewed, also, that portion of the law which deals with the re-possession of materials on defaulted and abandoned jobs, which subject has been dealt with in past issues of DOMESTIC ENGINEERING. At the conclusion of his address, Mr. Alles read letters from the Pasadena Merchant Plumbers Association of California and from the California State Merchant Plumbers Association which were endorsements of the registration of contractors bill already enforced in California and which recently was presented to the New York State Legislation.

President Wolff introduced to the members assembled, J. F. Donovan, executive secretary of the National association; William E. Taylor, secretary of the Heating and Plumbing Board of Trade of New York; W. C. Williams, president of the Pennsylvania Master Plumbers Association; Carl Forve, state secretary of the Pennsylvania association; John Turner, past state president, and Charles Eckerode and James O'Rorke, all from Pennsylvania.

The convention opened with a morning session, April 6, with a preliminary report of the credentials committee and this was followed by a report on the committee of sanitation, by John D. Cooley of New York City.

William J. Cassidy of Albany, reporting for the committee on legislation, told of the great number of bills that had been presented to the legislature. Fergus McLoughlin, reporting for the committee on state licenses, stated that the committee had nothing to bring before the convention. Charles F. Fritz of Freeport reported for the committee on apprenticeship. He urged the members when returning to their respective communities to get in touch with their local boards of education with the idea in mind of developing courses and curriculum for the education of apprentices.

Jere L. Murphy reported for the committee on standardization. He spoke of the dangers of over-standardization as being quite as important and detrimental as those of under-standardization. Over-standardization, he said, would seriously endanger the position held by the master plumber if it were brought to such a point it would do away with the necessity of the master plumber making installations.

Joseph G. Hildebrand, secretary-manager of the Plumbing and Heating Industries Bureau, reviewed the activities of the Bureau. One point of particular interest, he mentioned, was the fact that the Bureau had been responsible for a protest on the United States Department of Commerce's publicity releases some weeks ago which urge home owners to do their own plumbing repair work. Joseph E. Berger, president of the Connecticut State Association of Master Plumbers, addressed the meeting briefly, and William D. Atkins of Schenectady reported for the committee on education.

Edward L. Miller of Rochester reported for the committee on welding. He urged a wider use of welding, and stated that especially on repair work welding would obviate the possibility of the handy man performing the master plumber's duties. He urgently requested the members to oppose legislation which seeks to license mechanical welding. President Wolff pointed to the activities in welding that are now being carried on in Brooklyn.

Jere L. Murphy, chairman of the Lien Law Revision and Enforcement Association, reported for the committee to co-operate with lien law revision. Mr. Murphy reviewed the work of the committee's co-operation with the Lien Law Association and stated that the benefits that have accrued so far in lien law legislation are directly responsible for the wholehearted support that the members have given the committee and not to any individual or committee.

Morris Jarcho, New York City, gave an actual example of the good results obtained from the lien law. He, like several other speakers, urged the wholehearted support of the members to this law.

The committee on resolutions reported that the several resolutions recommended to be taken before the annual

convention had been concurred in by them. The resolution that manufacturers, manufacturers' agents, wholesalers, and wholesalers' agents in New York state be requested to sell only to the licensed plumber caused a good deal of comment from the floor because it was originally presented worded as if to include only New York City. The resolution was finally amended to include all of New York State and concurred in.

The resolution that the selection of the National convention city be taken out of the hands of the National convention at large and placed at the disposal of the board of directors also met with stiff opposition from the floor, but the resolution was passed.

The introduction of past presidents brought to the platform George Drake of Buffalo, John Dugan of Albany, Fergus McLoughlin of New York City, Martin Utz of Rochester, I. J. Brown of New York City and Jere L. Murphy of New York City. The past presidents were introduced separately by Jere L. Murphy. Matthew J. Kennedy of Brooklyn was also called to the rostrum as a past president, but he was not in the room at the time.

National President Donoghue commended the New York association for its excellent work throughout the term of his office, and reviewed the activities of the National association. He stated that one of the most important moves was the establishment of permanent headquarters at Washington, D. C. Added personnel, he feels, is needed to maintain the more direct contact that is needed between the National association and the state associations.

He spoke of dealer co-operation and the advancements that had been made during the past year between master plumbers and utility companies and pointed out that, although difficulties were still being encountered in some territories, the general condition was greatly improved. He feels that the utilities of the American Gas Association who were merely striving for co-operation had made a great number of sacrifices in order to further the cause and that these sacrifices should be accepted by the master plumber in the spirit in which they were given. He urged support of the bill calling for separation of contracts.

In his remarks on direct-to-you activities, he stated that the National association's letter of December 21, 1931, had been wrongly interpreted by some wholesalers to mean that the National association favors a plan of selling similar to the Allentown plan. He stated emphatically that this is not true. A complete explanation of the National association's attitude on this question appears on Page 36 of this issue.

The report of the committee on audit, the report of State Secretary Harry Voletsky of Brooklyn and the report of State Treasurer John J. Dixon of Brooklyn, were accepted.

At the suggestion of Joseph O. Stapf of Albany the state and national governments will be asked to discontinue the practice of having plumbing work done by their own employes.

William Atkins of Schenectady and Patrick Gleason, New York City, served as tellers for the election of officers.

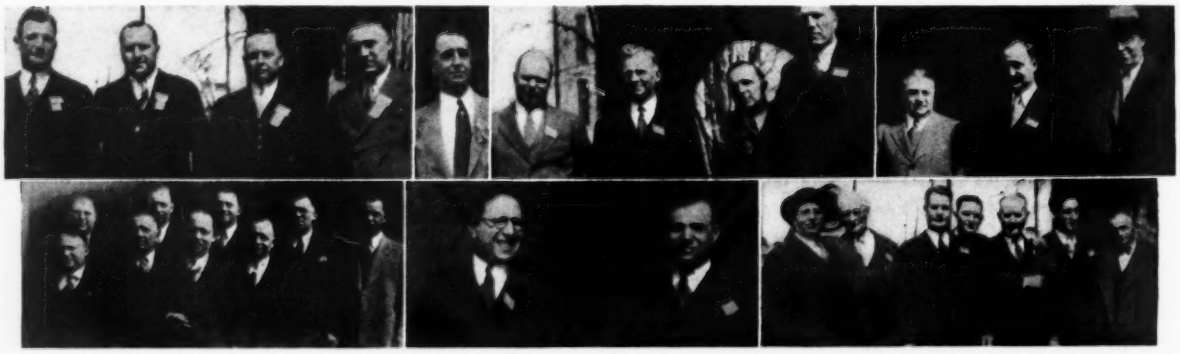
Henry J. Ritter of Buffalo was elected president for the ensuing year. William V. Foley of Queens was elected vice president. Mr. Ritter named for his financial recording secretary W. Frank Clucas of Buffalo.

The activities of the convention came to a close at the dinner-dance at the Hotel Pennsylvania.

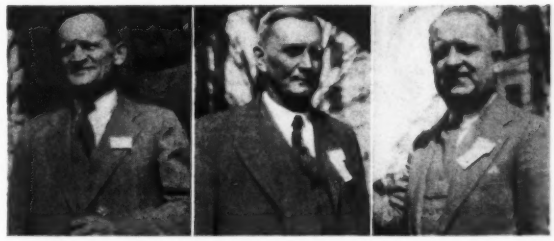
Heating and Ventilating Codes Discussed at Pittsburgh Meeting

W. H. Driscoll, vice president of Thompson-Starrett Co., and past national president of the American Society of Heating and Ventilating Engineers, addressed the Pittsburgh Chapter of the Society at its March meeting.

Mr. Driscoll spoke on the development and accomplishments of heating and ventilation, with special reference to Society codes. He said it is difficult to formulate a perfect code which will provide for all possible developments and not restrict future ideas.



Top row, left to right: Edward B. Kleine, of Cincinnati, Ohio, vice president, National Association of Master Plumbers; Frank E. Stuart, Michigan state field secretary; A. W. Moss, president, Macomb County association; Archie Williams, secretary, Macomb County association; Rupert J. Weber of Chicago, National director; John E. Green, Detroit; George H. Bartling, Detroit; C. K. Jacobs, Century Mfg. Co., Detroit; William Miller, Detroit; Harry Sprenkle, Detroit; Ed. Hosbach, Detroit; F. D. Cooper, Excelso Products Corp., Buffalo, N. Y. Bottom row: (left) front row, M. Green, S. Levine, B. Weinberg and A. Bryer; back row, H. Aaronson, H. Parker, B. Kaplan, G. Cole and M. Freedman, all of Detroit; (center) Harry Glasser and Frank Hoffman, both of Detroit; (right) A. W. Auger, Murray W. Sales & Co., Detroit; William Ames, Flint; Robert F. Rowand, state plumbing inspector, Lansing; Orville Proctor, Flint; J. K. Miller, plumbing inspector of Flint; Max Holmes, Flint; and John Pikula, Detroit



Left to right: Herman E. Ysberg, Saginaw, re-elected president of Michigan state association; Henry Kraker of Holland, re-elected state vice president; and Louis F. Wolf of Mt. Clemens, chairman of the convention committee

Michigan Endorses National Legislation

THAT the National Association of Master Plumbers is emphatically opposed to the sale of plumbing fixtures and material direct to the public by wholesalers, manufacturers or any other source of supply other than the master plumber, was one of the principal messages brought to the Michigan State Convention by National Vice President Edward B. Kleine of Cincinnati, Ohio. A resolution to support the legislation now before the House of Representatives at Washington, D. C., which has the endorsement of the National association was endorsed by the Michigan delegates.

No change was made in the official personnel of the association, the following officers being re-elected: Herman E. Ysberg of Saginaw, president; Henry Kraker of Holland, vice president; and W. A. Johnson of Kalamazoo, secretary-treasurer. The following will serve on the board of directors: Earl Cresley, Port Huron; John L. Petersen, Grand Rapids; Glen Seeley, Pontiac; Ark Moss, Warren; and William Hughes, Bay City.

Delegates to the National Convention are: Mr. Ysberg and Mr. Johnson. The alternates are Mr. Kraker and Mr. Ames.

The convention city for 1933 will be announced at a later date by the board of directors. The program was followed as per schedule on the opening day, concluding with a trip to a local creamery farm in the afternoon. How Chicago is trying to sell more merchandise by using clearly-written price tags was explained by National Director Rupert J. Weber, of that city. Get out of the alley; select a good locality; try to overcome the antagonism of the public to the plumber; advertise in your suburban newspapers, and use a few leaders to meet direct-to-you competition, were some of his suggestions.

James A. Hackett of Brooklyn, N. Y., representing the Kings County Lighting Co., painted an interesting picture of the possibilities of utility merchandising. He urged the master plumbers to use their best selling efforts to put over the plan now in operation between the American Gas Association and the master plumbers, warning them that unless they do so the utility companies may be forced to look for other dealers. Other speakers representing the utility companies were as follows: J. E. Spindle, president of the Michigan Gas Association; N. E. Loomis, merchandise sales manager, Detroit City Gas Co.; and C. L. Holt, manager, Mt. Clemens Gas Co.

E. N. McDonnell, of McDonnell & Miller, Chicago, addressed the convention on the subject of direct mail advertising. He described the methods used by his company in its mail campaigns, and gave his hearers many valuable pointers.

Mr. Kleine extended an invitation to all present to attend the forthcoming national convention in New York City next June. This will make the golden anniversary of that organization. Mr. Kleine explained that local secretaries will soon receive a letter from the national office asking them to have their members fill out a statement as to their annual buying power. Co-operation in this is essential to overcome some of the obstacles that are likely to confront the industry in the future, Mr. Kleine said.

Norman J. Radder, publicity director of the Plumbing & Heating Industries Bureau, Chicago, explained the work of the Bureau. He emphasized the importance of a proper bookkeeping system. Frank E. Parker of the Detroit Merchants' Credit Bureau explained in detail the work of his organization.

The delegates adapted a resolution calling for the appointment of a committee to study conditions in the state. The committee will report to the board of directors.

The convention passed a resolution supporting the bill now before the House of Representatives at Washington, D. C., advocating the separation on general bids on government work.

Telegrams of good wishes were received from Arthur Lahr, of Lafayette, past president, of the Indiana Master Plumbers Association, and Harry Nelson, president of the Nelson Co., Detroit.

The following committees were appointed to handle the convention's business: Resolutions, Henry Kraker, Earl Cresley and Al. Mitchell. Auditing, John Peterson, Samuel Mathews and Leo Beall. Credentials: Ark Moss, E. W. Hahn and Lyn. Williams. Sergeant-at-arms: Archie Williams.

R. L. Spitzley, of Detroit, president of the Heating and Piping Contractors National Association, extended an invitation for all to attend his organization's forthcoming annual convention in Detroit.

Allan Farquhar, credit manager of the Nelson Co., Detroit, stated that unfair competition is one of the reasons of the present business situation. He said wholesalers should be more strict in granting credit.

Franklin E. Darling, Fall River, re-elected Massachusetts state president, and Albert E. Roberts, Boston, re-elected state vice president

Massachusetts Favors Plan to Stop Bid-Shopping

AN OUTSTANDING feature of the annual convention of the Massachusetts State Association of Master Plumbers was the delegates' endorsement of the plan developed by Professor Eric T. Huddleston of the University of New Hampshire designed to eliminate the "shopping of bids" by general contractors. Professor Huddleston has made an extensive study of this practice and the plan he has developed has been used successfully in connection with the building program at his university. The "Huddleston plan," as it has become known in Boston building circles, consists of a "form of proposal" which is filled out by the general contractor. The contractor is required to list on this form the names and bids of all sub-contractors.

This year's convention was of a single day's duration whereas in the past it has covered two days. The meeting was held at Boston on April 5, and so efficiently was the convention handled that every item of business was properly handled.

During the past year the membership of the association has increased, 36 new members and 11 reinstatements having been recorded. According to National President P. W. Donoghue, of Boston, this gain places Massachusetts in the front rank, inasmuch as only two or three other state associations have equalled this record.

A unique feature of the progressive work of the Massachusetts state organization is its maintenance at the Massachusetts Institute of Technology, Cambridge, of a research laboratory engaged in the investigation of practical problems relating to plumbing materials and practice. In the launching of this enterprise, the association had assumed a considerable indebtedness to the Institute and during the year this was completely paid off.

A remarkable record for the year was a 100 per cent attendance at all meetings of the board of directors.

The annual two-day conference or short course conducted by Massachusetts Institute of Technology for the Massachusetts State Association was this year successfully covered by a conference of one day, with 300 in attendance.

The year's work under President Darling was accomplished in a most harmonious manner and this was reflected in a convention displaying the same quality. Satisfaction of the membership in the work of their officers was attested by the re-election of the entire list, with the exception of the secretary; J. Harry McGourty, who though urged to accept the office for another year, could not see his way clear to do so. Selection of a new secretary was left with the president.

The officers for 1932-1933 are as follows: president, Franklin E. Darling, Fall River; vice president, Albert E. Roberts, Boston; treasurer, J. Preston Perham, West Roxbury. President Darling re-appointed the same board of directors which served last year, the name of Edward H. Marchant, president of the Boston association being added. The board is composed of the following: P. W. Donoghue, Boston; Philip S. Bailey, North Scituate; Walter P. Bailey, New Bedford; Horatio S. Bond, Hyannis; Thomas J. Conway, Springfield; Alexander E. MacDonald, Worcester; E. H. Marchant, Boston; John P. McGrath, Northampton; Edward T. O'Day, Lowell; Elliot W. Tarr, Gloucester; Robert Walmsley, Haverhill.

Chairmen of committees were re-appointed as follows: legislative committee, Andrew F. Curtin of Medford; M. I. T. committee, John J. Downey, Boston.

Frank E. Darling of Fall River, J. Harry McGourty of West Newton, John P. McGrath of Northampton and Albert E. Roberts of Boston were named as delegates to the national convention. The alternates are F. E. Perkins of Newton, John Mullaney of Lowell and Mark Greenleaf of New Bedford.

Joseph J. Crotty, vice president of the Central Foun-

dry Co., New York City, was one of the principal speakers at the convention. His subject was "Present Day Problems of the Plumbing Industry." Overcrowding of the industry was named as one of the most serious problems. Remedies that he suggested were elimination of the unfit, restriction of additions to the industry, greater care and more rigid requirements on the part of plumbing examining boards, penalties for loans and transfer of licenses.

The present extended system of loose credits was pointed to by Mr. Crotty as a destructive factor, resulting in various dangerous practices which undermine the entire plumbing trade. Mr. Crotty named co-operative trade efforts as the outstanding need of the industry. With 36,000 master plumbers in the country, only 12,000 have any connection with a trade association, he said. The manufacturer and wholesaler who works with the plumbing trade should receive the trade's support, Mr. Crotty remarked.

He emphasized the need for better merchandising methods by the plumbing contractor. He mentioned periodical inspection as an outstanding need and as of the greatest benefit to the trade. New Jersey and Illinois were mentioned as two states in which this effort had attained success. Mr. Crotty closed his address with an appeal to forget all about depression and in the temporary absence of new construction to go after remodeling and replacement work.

At the afternoon session President Darling turned the chair over to David Craig of Boston, past national president. After reminiscing in a delightful way, Mr. Craig introduced another Boston man, P. W. Donoghue, the present incumbent of the national presidency.

After pointing out that three years of depression had not been able to bring about any backward movement in the work of the Massachusetts state association or to prevent increase in its membership, Mr. Donoghue described the work of his office and the year's national accomplishments.

Some of the high spots included the establishment in Washington, D. C., of permanent headquarters, co-operative agreements between the gas companies and the plumbing trade, efforts toward separation of mechanical equipment bids from the general contract in government building undertakings, efforts to overcome direct-to-consumer sales, and co-operation with the Plumbing and Heating Industries Bureau.

Through the co-operative efforts of the gas companies and the plumbing trade, it is now possible in many communities for the plumbing contractor to install gas appliances at a profit, Mr. Donoghue stated. The speaker emphasized the fact that the successful accomplishment of such co-operative efforts depended on assurance that the plumber is qualified and able to install these appliances in an entirely satisfactory manner. The future promises a splendid business in gas appliances, Mr. Donoghue feels.

He took the position that the chief remedy for direct-to-consumer competition is the support on the part of the trade of wholesalers who confine their sales to the plumbing trade. He also insisted that before credit is extended to a newcomer into the plumbing business, he should be expected to present proof that he is deserving of such credit.

An inspirational feature of the convention was the address on "Pre-eminent Optimism," delivered by Frank W. Dunham, secretary of the Chamber of Commerce of Fall River. He showed the need of the quality of optimism concerning one's town, trade association and home. Included in the convention's social program was the noon luncheon and the annual banquet in the evening.

The question of "shopping of sub-bids" was brought to the attention of the convention by Charles Tucker, of Boston. He said the plumbing trade is well aware that it has become more or less general practice on the part of a certain group of general contractors to set up a "dummy" plumbing bid for bidding purposes, and after securing the contract, and on the basis of this false bid, to shop around for lower bids in order to beat down the bid price. Mr. Tucker explained this practice, and said that, unfortunately, it has been too successful, and has resulted in the breaking down of the standards of the higher type contractors.

The Boston Building Congress, whose membership includes architects, engineers, contractors and sub-contractors, is striving to improve conditions in the building trades.

In connection with the subject of "shopping of bids," the Boston Building Congress invited Professor Huddleston to address one of its recent meetings on "New Procedure to Prevent Shopping of Sub-bids." Consequently, he was called upon to explain his plan at this convention.

The Boston Building Congress is seeking the backing of each branch of the building trades in the launching of the "Huddleston plan," and in furtherance of this effort, the Massachusetts Master Plumbers Association voted its endorsement.

The detail work of the convention was ably handled by the following: J. Preston Perham, chairman, West Roxbury; Patrick A. Lang, sergeant-at-arms, East Boston. Auditing Committee: John J. Downey, chairman, Brookline; Llewellyn W. Stevens, Needham; Abiel H. Wordell, Fall River. Credential Committee: W. H. R. Goudey, chairman, Boston; William P. Kane, Boston; Thomas J. Conway, Springfield. Resolution Committee: James J. Cotter, chairman, Boston; Charles F. Peck, Greenfield; George T. Tucker, Worcester; Maurice R. Sheehan, Salem; Mathew T. Doherty, Holyoke.

J. Preston Perham, West Roxbury, re-elected state treasurer

ANSWERED

QUESTIONS FROM OUR READERS AND ANSWERS BY OUR ENGINEERS

How to Cure a Defective Domestic Hot Water Supply System

To the Editor:

In a certain residence we have connected up a furnace coil with two storage tanks for heating domestic hot water; the water from the coil runs to a 60-gal. storage tank and from there to a 30-gal. storage gas water heater, from which it proceeds to the fixtures. The two tanks are not on the same level, the 60-gal. tank being about 18 in. higher up than the 30-gal. tank, and, instead of the hot water circulating normally from the 60-gal. tank out of the top and into the 30-gal. tank, the cold water from the 60-gal. tank seems to back out of this tank and to mix with the water from the 30-gal. tank, thus reducing the temperature of the water going to the fixtures.

We have installed check valves on the lines at different points to prevent this but without result; we are of the opinion that the queer circulation results are caused by the difference in the levels of the two tanks and the difference in the weights of the water in the two tanks, but we have been unable to correct the difficulty. The owner, who is a mechanical engineer of note, believes that a thermostatic check valve so designed as to close against cold water and to open with hot water would solve the problem, but we do not know of such a valve or if a valve of this description is manufactured. If there is such a valve will you kindly advise us and also the approximate cost of the 1-in. size, and if there is not such a valve can you make any suggestion to help us out?

Indiana. H. E. S.

Our correspondent has failed to enclose a sketch which would indicate anything farther than just what he has said in his letter; a close study of the letter, however, would seem to indicate an installation somewhat along the line of that illustrated in Fig. 1. The pipe connections may vary somewhat from those shown, but it is believed that the whole cause of trouble is the fact that the 60-gal. tank is set 18 in. higher than the 30-gal. tank into which it is supposed to circulate. We do not see how—with such an arrangement—it would be possible to avoid a high point and air pocket in the line carrying heated water from the 60-gal. tank to the 30-gal. tank, because it is self-evident that this line must come off of the top, or near the top, of the 60-gal. tank and also that it must drop down 18 in., in order to enter the 30-gal. tank. This is marked "A" on the sketch.

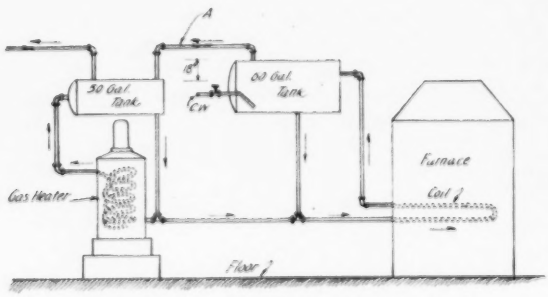


Fig. 1

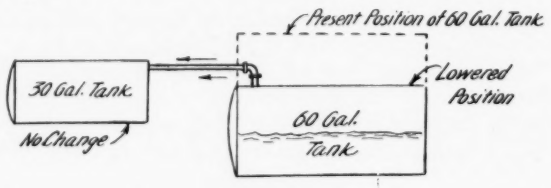


Fig. 2a

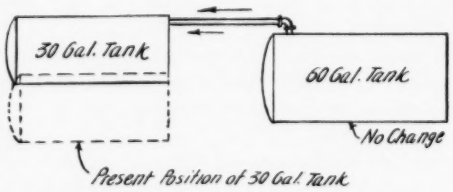
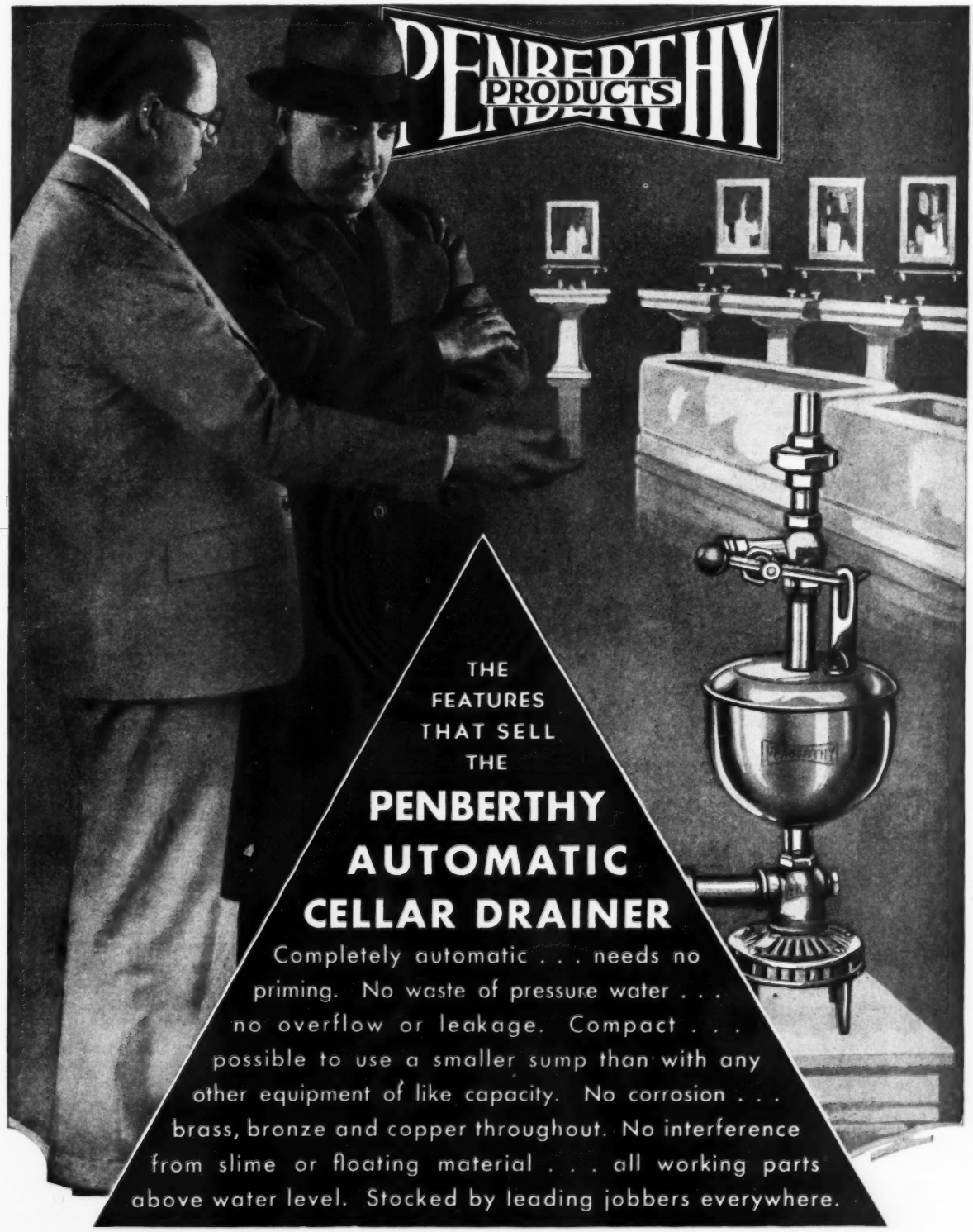


Fig. 2b

If the cold water is introduced into the 60-gal. tank, as indicated, any draw-off from the fixtures would set in motion a reverse flow from the bottom of the 60-gal. tank and back up into the bottom of the 30-gal. tank just as our correspondent describes. With the information submitted this seems to be the most likely point of trouble. Now as to the ways and means to remedy the matter there are several things which may be done, although none of them involves the use of a thermostatic valve such as suggested by the customer. The difficulty with such a valve is that it would close with the advent of cold water and that this would hold the cold water in the line stationary, so that it never would heat and the thermostat never would re-open. Besides any valves in hot water circulation lines of this type are poor practice.

The first means to overcome the difficulty of an air bound circulation line—if this is the cause of the trouble—would be to lower the 60-gal. tank so that the top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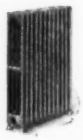

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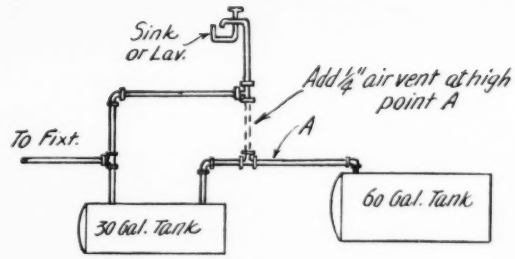


Fig. 3

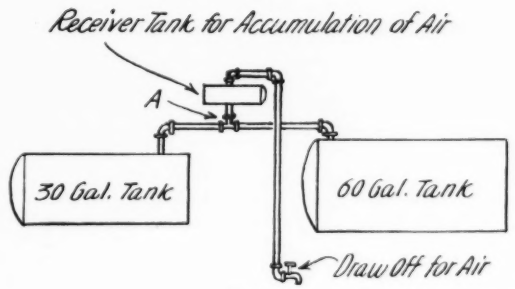


Fig. 4

circulation line would vent into the 30-gal. tank and get rid of the accumulation of air in that manner. This is illustrated in Fig. 2a. The second possibility is to raise the level of the 30-gal. tank to accomplish the same thing in the same manner, see Fig. 2b. If both of these suggestions are impractical, due to local conditions over the tanks, a vent line—say ¼ in. diameter—could be run from the high point, "A," to and connect with some hot water branch above so as to vent through this branch (see Fig. 3), and, if all of these are impossible, an air chamber might be installed above "A" so as to allow the air to collect in this chamber from which it could be drawn off from time to time whenever it becomes objectionable. The larger this chamber is made the less frequently the air must be drawn off. This could be arranged as indicated in Fig. 4.

Of course there still remains the possibility that our correspondent has an entirely different arrangement of piping, in which case we suggest that he submit an accurate diagrammatic sketch showing just what his pipe connections are and the sizes of the circulation lines.

Concerning Pressures in House Drains With Various Pitch

To the Editor:

The least pitch on drainage and waste pipes generally allowed is ⅛ in. to the foot, ¼ in. to the foot being demanded when possible to obtain it. It is important to be able to figure out whether it is possible on any given job to gain the required pitch.

The accompanying illustration shows that in a run of 123 ft. 6 in., there is a possible drop of 2 ft. 3½ in. What is the grade or pitch per foot? Also, suppose there is a horizontal run on the house drain of 156 ft. 6 in., and there is a pitch of ½ in. per ft. What is the total fall?

If the 4 in. stack rises 56 ft. 7 in., what will be the pressure in each of these two jobs at the point where the house drain enters the house sewer?

Connecticut. S. M. B.

If there is a difference in elevation of 2 ft. 3½ in. between the two ends of the house drain, and the horizontal distance is 123 ft. 6 in. the amount of the grade or pitch per foot can be found by dividing 2 ft. 3½ in. by 123. First reduce 2 ft. 3½ in. to inches, which equals 27½ in.

$$27.5 \div 123.5 = .22 \text{ in. per foot}$$

In the second part of the problem, multiply the amount of pitch per foot by the total length. ½ in. × 156½ = 78.25 in., or 6 ft. 6¼ in.

The problem relating to pressure is solved by finding the total height from the bottom of the outer end of the house drain to the top of the stack. In the first job it is 156 ft. 6 in. + 2 ft. 3½ in. = 158 ft. 9½ in. A column of water 1 foot high, that is, a column of water with 1 ft. head, exerts a pressure of .4335 lb. per square inch. Therefore the pressure will be .4335 lb. × 158 ft. 9½ in., or .4335 lb. × 158.79 = 68.84 lb.

In the other case the pressure = .4335 lb. × (156 ft. 6 in. + 6 ft. 6¼ in.) or .4335 lb. × 163.21 = 70.75 lb.

If the loss due to friction is not taken into account, the difference in horizontal length does not affect the pressure.

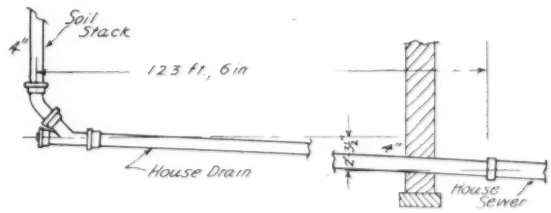


Fig. 1

Troubled With Too High Temperature in the Return of a Heating System

To the Editor:

We are running a boiler at about 75 lb., and reducing the steam pressure to about 40 lb. for a vapor heating system; the returns come back at a pressure of 10 lb. and at a temperature averaging almost 200 deg. Fahr. We have replaced some of the steam traps and stopped some small leaks without any favorable results. How can the temperature of the return be reduced?

Connecticut. R. L. D.

Our correspondent has propounded something that does not seem consistent or else he has not given all of the facts in the case. In the first place, no vapor system of steam heating operates at 40 lb. on the steam side, nor can any vapor system have 10 lb. on the return. The basic definition of a vapor system of steam heating is a steam system operating close to atmospheric pressure, and with a vented return open to the atmosphere at all times when it is necessary to vent the air out of the system. At first it was thought that the 40 lb. of steam pressure was used to operate a vapor system after being run through another pressure reducing valve, but the 10 lb. pressure on the return seems to make this

supposition impossible as there would have to be a steam pressure in excess of the return pressure in order for the system to circulate.

In any event the way to reduce the temperature of the return is to reduce the steam pressure on the supply end—if this is possible—and to use only 2 to 5 lb. pressure to operate the heating system. What the objection is to the high temperature return our correspondent does not state; if the returns are going back to the boiler the high temperature is no particular disadvantage, but if the returns are being wasted to the sewer, there is, of course, a certain amount of heat loss which would occur over that when the returns are at a lower temperature. The best way to handle this would be to install some sort of a cooling coil through which the returns would pass and transfer their heat to water going to the water heater or in some other manner.

If the heating system is a vacuum system the high temperature condensation would seriously interfere with the maintaining of a suitable vacuum on the return, but in view of the fact that a 10 lb. pressure is being used on the return, it is very doubtful if this system is a vacuum one. It must be remembered that, if the steam pressure on the heating system is 40 lb., as stated, the temperature of the condensation formed will be about 287 deg. Fahr. and the cooling occurring in this condensation will only be such as results from the radiation on the return main and piping. It is evident, however, that our correspondent has steam traps on the return ends of the radiators as he states that he "has replaced some steam traps . . ." although these might be on the steam main drips. If they are on the radiators, however, it is possible that the high pressure steam has so damaged them that they are no longer functioning properly. Most of the thermostatic radiator traps are guaranteed for pressure only as high as 15 or 20 lb.

Can You Answer These Questions?

A Question and Its Answer

The following question was asked in the issue of March 19, and the following answer is by a reader:

On a roof covering an area of 100 ft. x 200 ft., the roof drainage is arranged so as to be taken care of by 10 roof leaders each of which drains an approximately equal portion of the roof. If the maximum recorded rainfall for any five minute period is at the rate of 6 in., per hour, and all the leaders are connected into a single drain, what should be the size of the leaders and what should be the size of the drain after all leaders are connected if the drain has a pitch of ¼ in., per ft.?

THE roof area drained by each leader will be approximately 1/10th of the total roof area as there are 10 leaders altogether, and each one drains approximately the same amount of area. The total roof area is

200 ft. × 100 ft. or 20,000 sq. ft.,

and this proportioned among 10 leaders gives

20,000 sq. ft. / 10 or 2000 sq. ft.,

as the approximate area drained by each leader. The usual amount of roof surface allowed to a square inch of leader area is about 200, so that each leader would have to have a cross sectional area of

2,000 sq. in. / 200 or 10 sq. in.

A 3-in. diameter pipe only has an area of 7.39 sq. in.; whereas, a 4-in. diameter pipe has an internal cross sectional area of 12.73, and is the required size.

As far as the size of the drain is concerned, this would depend on the amount of water which it is necessary to carry off during the maximum rainfall, which, it is stated in the problem, amounts to 6 in. per hour. This is only the rate of fall for five minutes, but, unless the water is expected to back up in the leaders, this amount must be taken care of by the main drain, and so it will be necessary to calculate how much water will fall on the roof when it is raining at this rate. In doing this, the projected area is considered, and not the slope area. For example: In the problem cited, the projected area of the roof is 100 x 200, or 20,000 sq. ft. The slope area would be somewhat greater if the roof is not a flat roof. The water which would fall on the projected area in one hour will be the projected area, multiplied by the maximum rate of rainfall in inches per hour and divided by 12; the result is in cubic feet per hour, which must be changed to cubic feet per minute and then to gallons per minute, from which the size of sewer can be obtained.

In the roof in question, with a projected area of 20,000 sq. ft., the amount of water falling on the roof in one hour, at the maximum rate, will be

$$\frac{\text{20,000 sq. ft. by 6 in., or 10,000 c. f. h.}}{12}$$

and, this reduced to c. f. m., is

10,000 / 60, or 166 c. f. m.

which, transposed into g. p. m., is

166 c. f. m. × 7½ gals., or 1,245 g. p. m.

The sewer pipe now may be sized by looking up any table giving the flow of water in sewers which have a varying pitch; the flow in a 10-in. sewer pipe, with a pitch of ¼ in. per ft., is given in one of these tables as 1,310 g. p. m., which is a trifle over what is required, and is the right size to use. If a lesser pitch were used in the pipe, a larger size would be necessary.

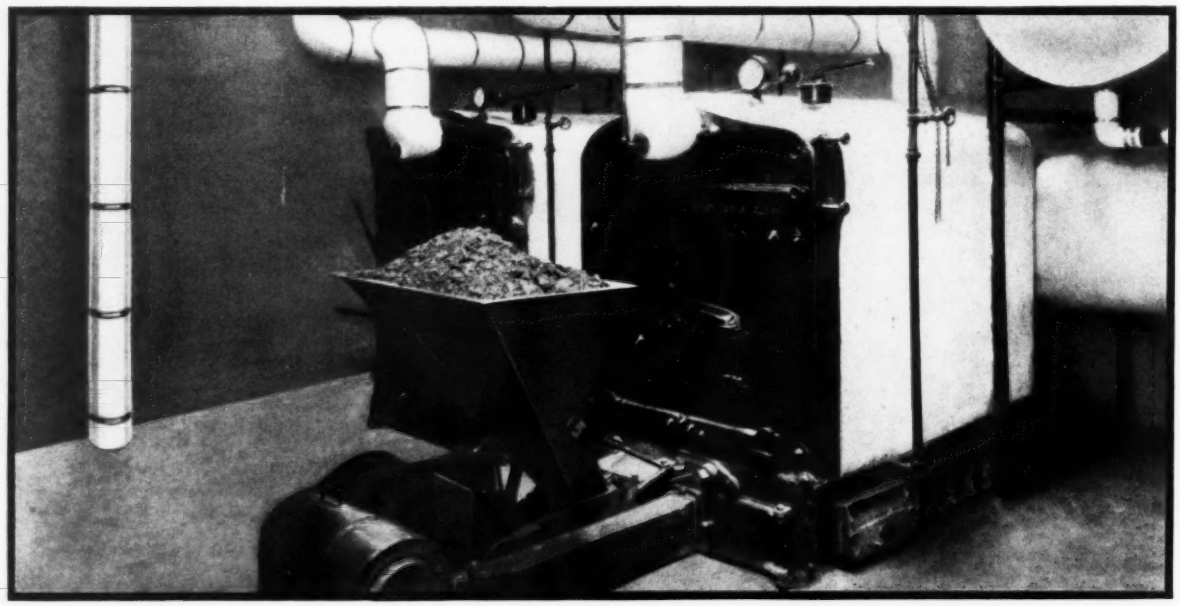
How Would You Answer This Question?

A certain 3-in. steam line carrying steam at 2 lbs. gauge pressure is run between two buildings for a distance of 200 feet and delivers steam with a pressure drop of ½-lb. in the line. This line is exposed to outdoor temperatures and is covered with standard thick asbestos covering wrapped in roofing. It is desired to double the capacity of the line and still keep the same pressure drop. Would the loss from the line be less if a second 3-in. line were installed or would it be better to tear out the first line and substitute a new 4-in. line? The line is kept hot 200 days a year with an average outside temperature of 35 F.

Answers based upon your experience, and suitable, will be paid for and published in the May 14 issue.

DOMESTIC ENGINEERING

AN EDITORIAL SECTION



"The stoker is simply the means of making mechanical the operation of a unit of which it is a part"

Sells Combustion Service Instead of Stokers

By THOMAS R. SHAVER

THE stoker, instead of being a disconnected unit complete in itself, is simply the means of making mechanical the operation of a unit of which it is a part. The variable conditions that will be met with in different plants are many. There is the fuel variable, the duty, or heat requirement, the boiler, the boiler setting, and the draft.

The effect of these items is obvious. That they are matters which the one who sells stokers must consider may not be so apparent. All of these five variable factors must be understood because they will have a bearing on the cost of the installation and its performance. Neglect of one of them may be the cause of losing a sale, or may gain a dissatisfied and complaining customer who will be a permanent liability to the business.

The automatic stoker, from the engineer's point of view, is a device which permits of the burning of coal and the consequent generation of heat in an efficient manner, and which substitutes mechanical power for part of the human labor in tending fires. From the owner's point of view, expressed bluntly, it is expected to be a means of reducing the cost of the heat generated. In the case of residence buildings in which the heating plant is tended by the owner, the reduced amount of attention is a factor.

Since money saving is the entire object, or at least the main object, of an owner considering the purchase of a stoker, the successful salesman, lacking any opportunity for other appeals sufficiently strong to win an order, must be able to sell on the one point of economy. The salesman must know a prospect when he sees one, and must know when to withdraw. He must know what sort of installation is required, and be able to estimate accurately what the saving in heat cost will be if a stoker is installed.

He actually goes to an owner with a proposition to spend money, which is a definite sum, due and payable at a stated time or times. In return for the expenditure, he promises the owner a saving in current costs of running his plant. The salesman need not be a trained and experienced engineer, but unless he is on sure ground when he is talking stoker installations and heating costs, he will not be very convincing to an owner. All owners are canny today. Particularly will the untrained salesman be out over his depth when he has to talk to a plant engineer.

In the early days of the small stoker, the merchandising organizations of various stoker companies were built up balloon-wise. A good man to sell stokers was judged to be simply any experienced salesman, particularly if the experience had been with household appliances. Vacuum cleaner salesmen, brush peddlers, and even book agents were called in, taught sales talks, and sent out to

get contracts. No effort was made to select men who could absorb training on the subject. High pressure methods, quick sales volume and thorough canvass of a small district or territory were the objects.

Every smoke stack was supposed to mark a prospect, which is not quite true. My own company indulged in this practice at the start, and changed over to its present plan of a smaller number of trained combustion salesmen selling economy where it could be promised, after the high pressure methods had proved unprofitable, because of expensive replacements and maintenance.

The methods we follow, which made our business in recent months, the most satisfactory in our history, are based upon a distinct plan of selection and training of salesmen, selection of prospects, analysis of conditions and variables encountered in each specific case, and the actual work of installation and servicing.

A man we accept as a salesman must be of the salesman type, must be mechanically inclined, and must be a worker. By salesman type, we mean a man who is pleasant to meet, intelligent, tactful, and has enough rebound in his disposition to enable him to stick to a prospect in spite of discouragement.

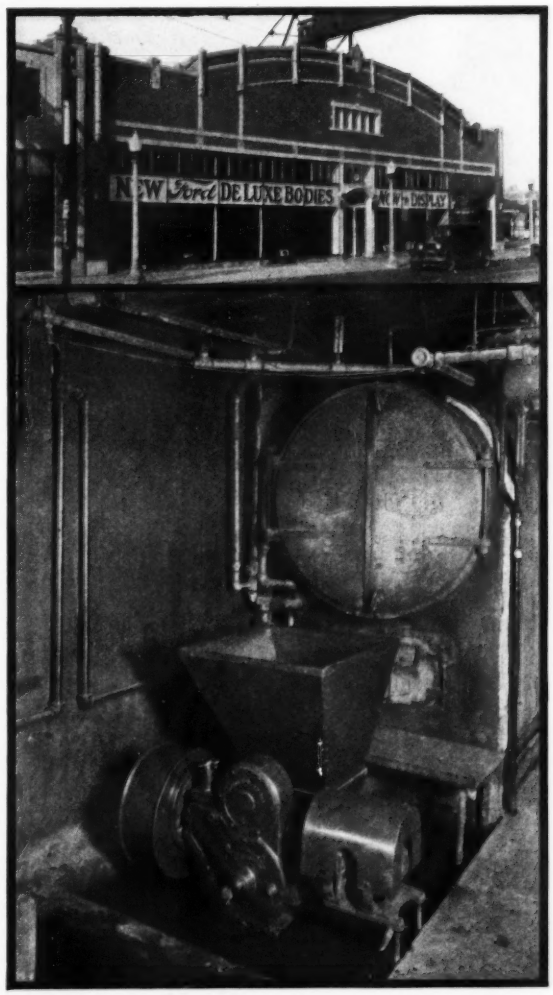
We can tell by interviewing a man whether or not he is sufficiently mechanically inclined to be capable of absorbing his instructions and experience in the stoker work. The man needs to have a mechanical intelligence rather than to be capable of actual mechanical work. There are men who are not capable of understanding the simplest mechanical matters, just as there are men lacking the legal mind, or a merchandising sense, or executive ability, and those men we can not train.

Our man must be a worker, because stiff competition of other makes of stokers, other fuels, and other uses for the owner's dollars is our daily experience. A man who is not a worker will not get far with a prospect whose brother-in-law sells a competing machine, and possibly has made statements that are not quite true and therefore hard to meet.

A new salesman in our organization is instructed to take an old hand, or the sales manager, with him to call on likely prospects. The more experienced man is able to give the new salesman very valuable instruction on these calls, by his analysis of the case. In fact, that is our method of training new men, after they have gone over the operation of the machine, a description of the kinds of boilers, and such general instructions in the office. As a man meets problems, sees them solved and later on has the case explained to him, he learns rapidly. As the new man gains experience he handles more and more prospects by himself, and the assistance of an old hand is less often required.

We do not believe it is possible to teach the stoker business in the class room, any more than it would be possible to teach dancing by lectures. It is expensive to have men doubling on a call, but there are advantages in it besides the training it gives. The chief advantage is that a greater percentage of prospects sign contracts, and lost contracts are also expensive.

The selection of prospects, with us, is a process of elimination. As in the old days, we regard every coal-burning boiler as a potential installation, until we learn otherwise. If a stoker is already in place, it is usually functioning well, if of recent manufacture, and enough better than hand firing, even if of an old type, to offer no opportunities for replacement. Next the question of boiler size enters and whether your unit is fitted for that particular job.

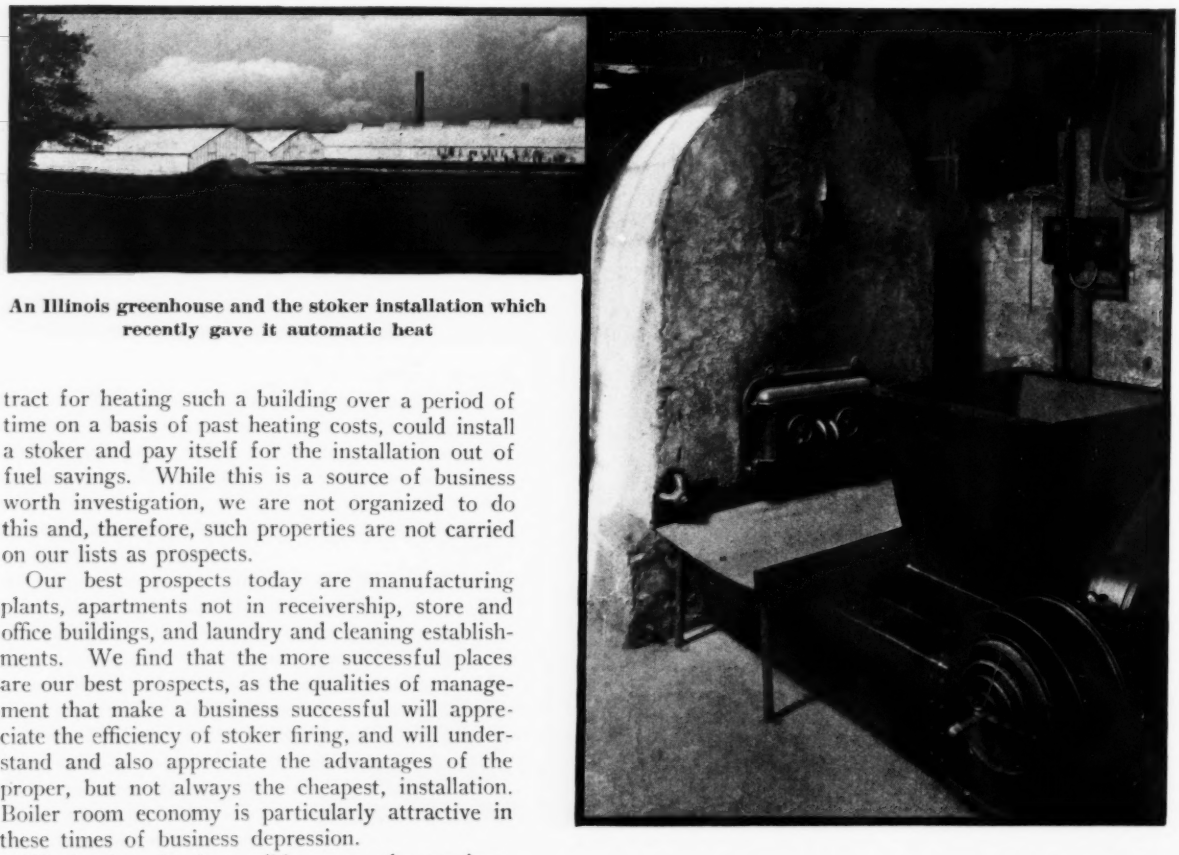


"Our best prospects today are * * * store and office buildings"

The next point we examine is that of the physical possibilities. There are cases of such restricted space that a stoker can not be installed at all, or the installation can not be made to operate with sufficient economy over hand firing to make it a good investment. In the former case we are forced to retire, and in the latter case we choose to do so, for the reason that a disappointed customer is bad for our business.

In some cases, particularly apartment buildings, we have found property in the hands of receivers anxious to secure the economies of stoker firing but without available funds to meet even very generous terms of payment. Probably a company organized to assume the con-

AUTOMATIC HEAT SECTION



An Illinois greenhouse and the stoker installation which recently gave it automatic heat

tract for heating such a building over a period of time on a basis of past heating costs, could install a stoker and pay itself for the installation out of fuel savings. While this is a source of business worth investigation, we are not organized to do this and, therefore, such properties are not carried on our lists as prospects.

Our best prospects today are manufacturing plants, apartments not in receivership, store and office buildings, and laundry and cleaning establishments. We find that the more successful places are our best prospects, as the qualities of management that make a business successful will appreciate the efficiency of stoker firing, and will understand and also appreciate the advantages of the proper, but not always the cheapest, installation. Boiler room economy is particularly attractive in these times of business depression.

Eliminating the impossible cases, the receivership cases, and the boilers that are too big or too small for our equipment, there is still an enormous field for stoker sales in our territory.

The variables that are met with in stoker work are not so often encountered singly. The list covers the main characteristics that make one job different from another. A salesman must keep them in mind, not because they will all affect his sales necessarily, but because they will affect the future happiness of the owner or engineer, and will create good will toward the product, or the opposite.

STUDY NEEDS OF EACH JOB

Fuel used in our territory is a good illustration. There is one grade of very cheap coal, testing very high in Btu. per pound and also very high in Btu. per dollar, that has a high percentage of ash, which has the characteristic of fusing at temperatures commonly reached in the fire bed, and gradually closing off the tuyeres. Trouble of this sort is most likely to happen when the boiler load is heavy, and a shut-down for any period of time is inconvenient. We warn customers against this coal where the boiler load is heavy. If it is used, the engineer can then take steps to guard against trouble and be on the watch for it. Coke is another fuel which we warn against. It is frequently used in apartment buildings and large homes, but is so abrasive that it causes excessive wear on most types of stokers.

The job conditions of boiler duty, boiler type, setting, and draft, usually must be considered together. In our experience, boilers too small for the steam requirements are much oftener encountered than those too large. This may be the result of added building volume, or added machinery. Consequently, we regularly find that a greater fuel consumption, during peak loads, is required. This offers no difficulty, as the stoker will burn more coal than can be consumed by hand firing, but then if the boiler is of the firebox type, as most of our installations are, more combustion space must be provided. The only way to do this is by means of dropping the stoker, which means putting it in a pit.

Unless the owner flatly refuses to spend the extra money, or conditions below the floor make it impossible, we make it a practice to install stokers for fire-box boilers in pits, regardless of the duty requirements of the boiler, because it gives an added boiler capacity that may be needed in the future. It also improves efficiency, and has corrected many cases of smoke nuisance, which is punishable by a fine in this city. Another big advantage, in the pit setting, is the added convenience of access to the fire bed. A stoker hopper is normally centered on the fire door, and is in the way in cleaning fires. By dropping the stoker two feet or more we can put a door on each side of the stoker below the water leg of the boiler, and access to the fire is much improved. The pit setting, of course, corrects the occasional case of setting too low for the boiler at its rated load. The pit setting costs more than setting on the boiler room floor, but we consider it well worth the extra expenditure.

Draft is a matter to be considered, especially if it is not quite sufficient for hand firing. With stoker firing, the boiler load is likely to be increased on occasion. The

fan will eliminate that part of the chimney load caused by the pull of the air through the fire bed, but will not permit of burning an increased amount of fuel if the draft is much below that required. For the sake of efficiency and smoke prevention, the salesman must check up on the draft.

We find it necessary for salesmen to consider all the variable factors, and to discuss them fully and intelligently with the customer. His future satisfaction with the equipment depends upon being informed about the characteristics of his plant and its limitations if they are below his expectations. The stoker will not always act as a cure-all for everything undersized or incorrectly installed about the plant. This practice of considering the plant as a whole, and the stoker as simply one unit in the plant, is our justification for regarding ourselves as selling combustion service. This analytical service has been appreciated by our customers. With a customer's help, we have frequently made savings beyond his expectation. The frank discussions have saved us much expensive time consumed by servicing and alibis.

Our practice in the work of installing stokers is to sublet the masonry and excavation work to a contractor in that business, as that branch requires equipment and personnel which mean considerable overhead expense to us. The mason work includes breaking through the floor, digging the pit and concreting it, if the setting is to be in a pit. It also includes new fire brick from the top of the dead plates of the stoker installation to a line twelve inches above.

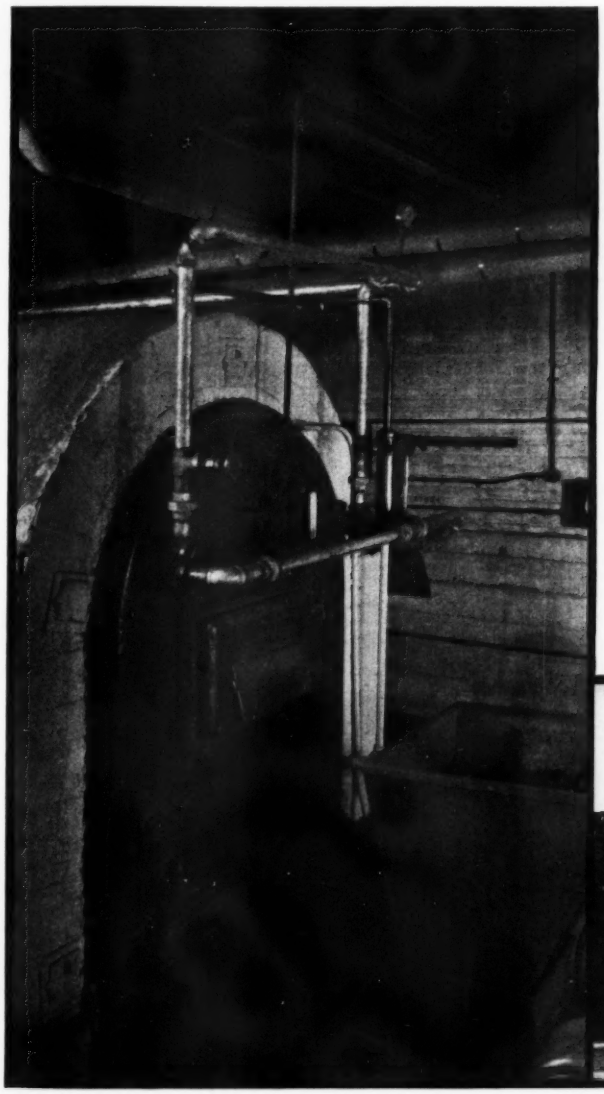
Our standard contract states that, in case any other brickwork in the boiler needs repairing, the mason contractor will do the work on a basis of cost plus a stated percentage of profit. This clause takes care of an uncertain factor which may prove to be a considerable item.

Before making up a proposal on a pit setting job, the salesman has inquired about any difficulties to be encountered. We have run into quick sand, steel grillage foundations, and sewer pipe, just under boiler room floors, and have been embarrassed by them. No effort is spared now to be sure of what is under the floor.

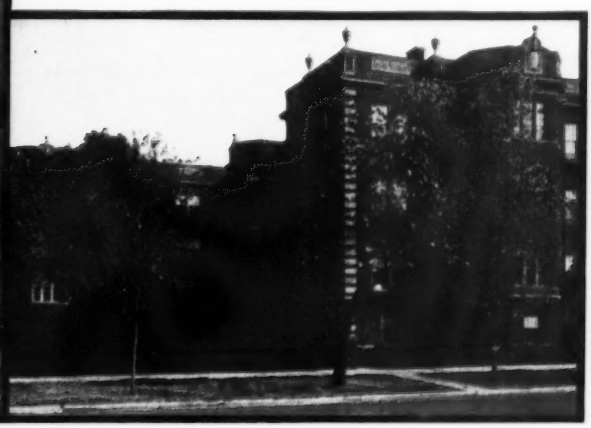
INSTRUCTING THE USER

Realizing that any man-made machine will wear out, will sometimes develop defects, and will suffer from abuse, we have available at all times a full supply of spare parts and experienced men to make replacements. In every installation, we send a man to instruct the man who is to operate the plant in the method of handling the stoker. A possibility of damage to the retort which is explained by the instructor is from starting up the boiler after it has been banked. Another important point is cleanliness of the air box under the retort. Fine coal will sift through the tuyeres and accumulate, and some time a spark may drop through and ignite the dust.

As stated before, our methods, which are based on considerable experience in the field, have produced satisfactory results. Our experience proves the selling of stokers can not possibly be that alone, but must be selling combustion service. A customer will be satisfied only for a short time with a 12 per cent saving in operating cost where he should get a 25 per cent saving.



A theological seminary is a type of institution which dealers find rates as a good prospect



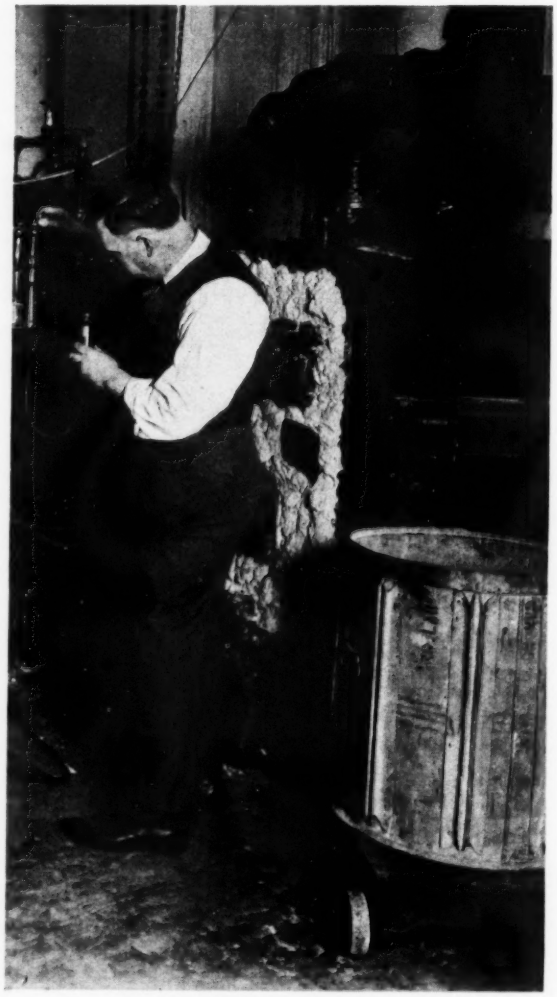
AUTOMATIC HEAT SECTION

Oil Burner Research

By WM. W. STEVENS

DOES the shape of the efficiency curve for a particular boiler change when different oil burners are operated in it? Ordinarily, a boiler efficiency curve will show a relatively low efficiency for relatively low outputs in feet of steam radiation. The efficiency values increase as the outputs increase until a maximum value is reached and then as the outputs are increased still further, the corresponding efficiencies decrease. Accordingly, the shape of the efficiency curve for a particular boiler generally is smoothly rising at the start and smoothly falling at the end. The answer to the question at the beginning of this article as well as the answers to other questions were worked out by E. L. Seeley and E. J. Tavanlar of Yale University as a result of the research work which they have been conducting in co-operation with the American Society of Heating and Ventilating Engineers and the American Oil Burner Association. Their formal report serves as the basis of this article. It was presented at the semi-annual meeting of the A.S.H.V.E., which was held at Swampscott, Mass., in June, 1931. Four different oil burners were operated in four different boilers. Efficiencies were computed for various boiler outputs. They were plotted against each other and the curves shown in Fig. 1 were the result. These curves show, as a first fact that the boiler efficiency curve (i. e., its shape) preserves its general character regardless of the oil burner. Accordingly, one would conclude from this evidence that the shape of an efficiency curve is largely a characteristic of the boiler. The fact that all of the curves for one boiler do not coincide indicates that the oil burner does influence the value of the curve but not its character. In other words, the oil burner, as a result of its characteristics, causes the efficiency curve for a particular boiler to be high or low as a whole.

In further explanation of Fig. 1, it should be pointed out that the top section shows the results of operating the four different oil burners in boiler No. 1. The several oil burners are designated OB 1, OB 3, OB 4, and OB 5. The boiler efficiencies are listed at the left hand side and the scale showing the boiler output in feet of steam radiation is located at the bottom of the cut.



Here is a laboratory test set-up

Notice that in each case, the efficiency of the boiler was lowest when the output was lowest. In the case of oil burner No. 5 (OB 5) this low point occurred at an output of approximately 200 ft. of steam radiation. Oil

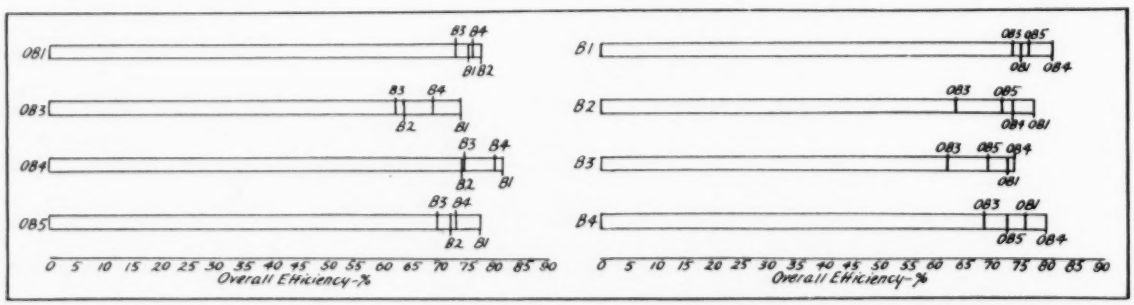


Fig. 1—Maximum overall efficiencies irrespective of boiler output rate, grouped according to boilers

Fig. 2—Maximum overall efficiencies irrespective of boiler output rate, grouped according to burners

burner No. 3 (OB 3) operating in the same boiler showed a low efficiency when the output was approximately 700 ft. of steam radiation.

The second question which is brought to mind is, "What practical value is there in knowing that the shape of the efficiency curve for a boiler does not change when different burners are operated in it?"

One answer is it means that a certain number of variables are eliminated. It means that a boiler may be expected to act in the same general way regardless of what oil burner is installed in it. It means that the highest efficiency which can be produced by the boiler in question will occur at a certain output no matter what oil burner is installed in it. Of course, the value of the efficiency at that output will be dependent upon the oil burner, among other equal things.

Another answer is, it indicates that even if a heating contractor is thoroughly familiar with the operation of the oil burner he handles, and if he knows how to install it, adjust it and operate it so as to obtain uniformly good results as far as the burner is concerned, the ultimate success of the complete installation is also dependent upon the characteristics of the boiler. For instance, suppose that oil burner No. 5 is being handled and the one who is making the installations is able to install it and adjust it perfectly, as far as the burner itself is concerned. Referring to Fig. 1, if he should be called on to install it in four different boilers, each supplying steam to 400 ft. of radiation, four different efficiencies will result. In the case of boiler No. 1, the efficiency is shown to run approximately 73 per cent. In the case of boiler No. 2, the efficiency is shown to run about 64 per cent; boiler No. 3, 63 per cent and boiler No. 4, 70 per cent. In short, there is about a 10 per cent difference in efficiencies, at the same output, between boiler No. 3 and boiler No. 1. Practically, this same variation exists between the efficiencies of these two boilers at an output of 800 ft. of steam radiation and at 1,000 ft. of steam radiation. It all points to the fact there is more to oil burner work than a knowledge of burner units. A heating system where an oil burner is installed must be considered in its entirety and all of the parts with their auxiliaries must be co-ordinated. The installer must

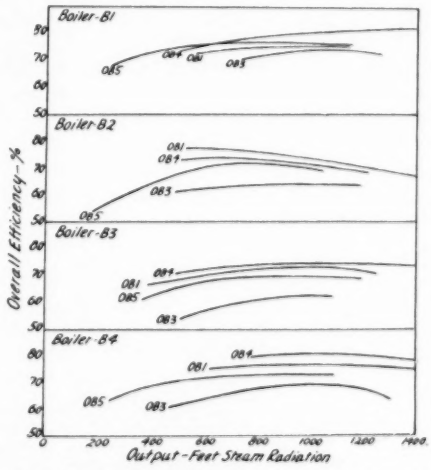


Fig. 3—Overall efficiency curves grouped according to boilers

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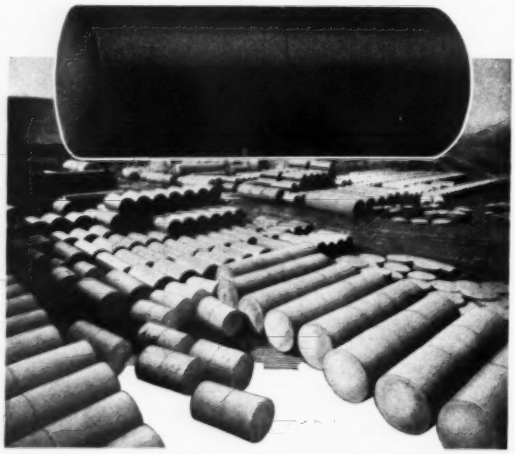

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know the boiler, its efficiencies under different outputs, its rating and its other characteristics.

In referring to Fig. 1, it will be noted that for each oil burner and boiler combination, there is a maximum efficiency. These maximum efficiencies occur at various boiler outputs. In the case of oil burner No. 5 with boiler No. 2, the maximum efficiency occurred at a boiler output of about 800 ft. of steam radiation. Boiler No. 4 with oil burner No. 3 developed its highest efficiency at an output of 1,000 ft. of steam radiation. It is interesting to compare these maximum efficiency values so they were plotted in Figs. 2 and 3. The output in feet of steam radiation at which the high efficiency occurred was not considered in this case. In effect, the lines marked OB1, OB 2, etc., represent the high points of the several curves shown in Fig. 1. Fig. 2 compares the different efficiencies with the oil burners grouped together while Fig. 3 compares the different efficiencies with the boilers grouped together. It will be noted that in the case of Fig. 2 and boiler No. 1, the highest efficiency was obtained with oil burner No. 4. Oil burner No. 5 was next efficient with OB 1 and OB 3 following. Fig. 2 also shows that of the four burners tested, OB 4 was the most efficient in three cases, while OB 1 was most efficient in boiler 2. Oil burner No. 3 was the least efficient in all four boilers, according to Fig. 2. Fig. 3 shows that with three of the oil burners, boiler No. 1 developed the highest efficiency, while in the case of OB 1, boiler No. 2 developed the highest efficiency.

What is there about Fig. 2 that can be used by the heating contractor in his oil burner work? One inference which might logically be drawn is that if oil burner No. 3 were being handled; if it were being installed in various boilers and if all of the installations were uniformly good, they would be less efficient than similar installations using oil burner No. 5, oil burner No. 4 or oil burner No. 1.

The lines in Fig. 4 merely serve to interpret in another way some of the results shown in Fig. 1. Here the burners in the case of the upper section and the boilers in the case of the lower section are shown plotted against the outputs of the boilers in feet of steam radiation. The points plotted represent the boiler outputs at which maximum efficiencies in Fig. 1 were obtained. It will be seen that maximum efficiencies for boiler No. 1 occurred in all but one case at higher outputs than the other boilers. Boiler No. 3 and boiler No. 4 show the same general results and boiler No. 2 gave lowest outputs at maximum efficiencies.

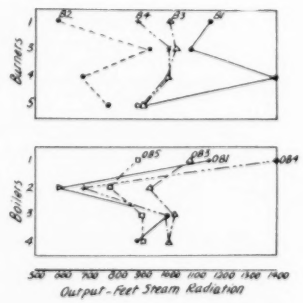
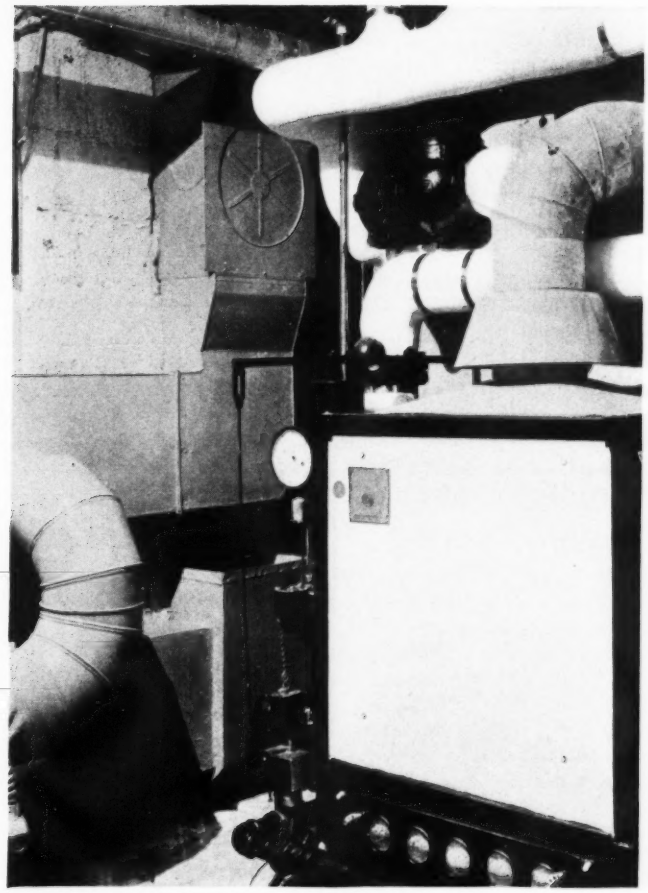


Fig. 4—Curves showing outputs at which maximum efficiencies occurred



Here is the gas fired equipment serving the home shown on page 71. Adjustments are necessary when changing from manufactured to natural gas

Gas Appliance Adjustments

When supplies are changed from manufactured to natural gas

By F. R. WRIGHT

TOP burner pilot flames on automatic lighters should be adjusted so that the tip of the flame does not come in contact with the bottom of the lighter cap, otherwise carbon will be deposited which tends to plug up the gas outlet. Impingement of the flame on the cap may also produce an undesirable odor due to incomplete combustion. Some lighters, in addition to having an adjusting screw which controls the flow of gas, also usually have an adjusting nut below the push button which should be adjusted to produce the proper spread of flames without causing them to become extinguished.

Some ranges are designed so that the top burner and manifold are supposed to be lower when using natural gas. This will be found to be the case in some instances where ranges use separate sets of burners for natural and manufactured gas.

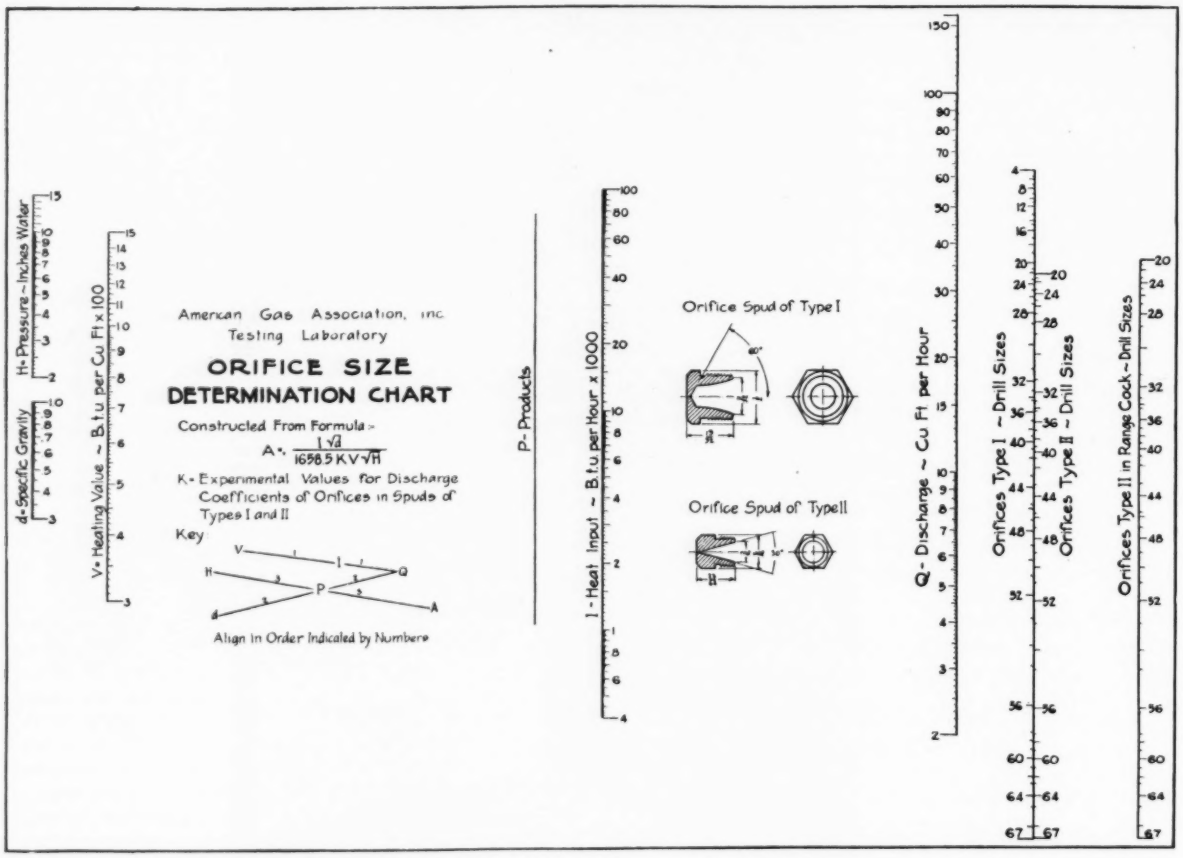
Practically all approved ranges are equipped with gas cocks having adjustable orifices.

To adjust the gas rate to the burner it is usually necessary only to screw the hood up on the gas cock until the proper flame adjustment is secured. However, in some cases it may be necessary to substitute another hood with a smaller orifice or use an orifice adapter. The more modern ranges having concealed manifolds are usually equipped with angle cocks which differ from this in design but which embody the same essential construction and are adjusted in the same manner.

The following table gives the correct gas rates for oven, broiler, and top burner units:

Burner	Gas Burning Capacity Btu. per Hour
Simmering	1,800
Top (Regular)	9,000
Top (Giant)	12,000
Oven, per cu. ft. oven space	10,000
Broiler, per sq. in. broiler area	120

AUTOMATIC HEAT SECTION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K - Experimental Values for Discharge Coefficients of Orifices in Spuds of Types I and II
Key
Align in Order Indicated by Numbers
d - Specific Gravity
H - Pressure - Inches Water
V - Heating Value - B.t.u. per Cu Ft x 100
P - Products
I - Heat Input - B.t.u. per Hour x 1000
Orifice Spud of Type I
Orifice Spud of Type II
Q - Discharge - Cu Ft per Hour
Orifices Type I - Drill Sizes
Orifices Type II - Drill Sizes
Orifices Type II in Range Cock - Drill Sizes

Fig. 1—This chart will serve as an aid in determining the proper fixed orifice size where the heating value, specific gravity and pressure of the gas and the correct heat input rating of the appliance are known

Adjustments are usually made by sight. Men experienced in making adjustments by this method, where previously they have had an opportunity to see various types of burners operate at proper adjustment on the gas to be used, are capable of adjusting burners very closely to the proper ratings. Figures 2 and 3 show views of gas range burners using too much gas and not enough gas.

Space heaters include: Radiant heaters, wall heaters, circulators, gas coal baskets, gas logs, gas steam, hot water, and warm air radiators.

Most space heaters are equipped with adjustable orifices, however, it may be advisable in some instances to install a new spud having an orifice the proper size or only slightly larger than is necessary to give the correct gas rate without adjustment by means of the adjustable needle.

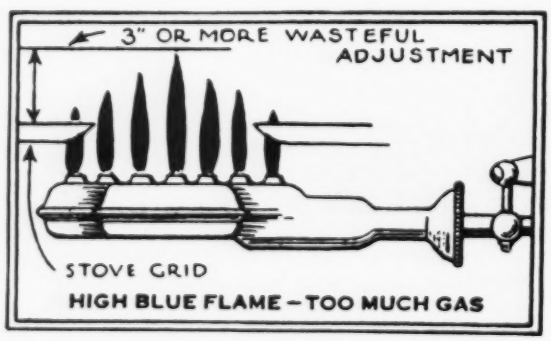


Fig. 2—This shows a wasteful adjustment using too much gas

The chart shown in Fig. 1 will serve as an aid in determining the proper fixed orifice size where the heating value, specific gravity, and pressure of the gas and the correct heat input rating of the appliance are known. Data concerning the gas supply is readily obtainable from the gas company. The hourly heat input ratings are shown on the name plate of all space heaters recently approved by the A. G. A. Laboratory. Ratings for all approved space heaters are also shown in the "List of Approved Gas Appliances" issued monthly by the A. G. A. Testing Laboratory. Radiant heaters are usually rated on the basis of from 1,750 to 2,000 Btu. per hour for each single radiant or 3,500 to 4,000 Btu. per hour for each double radiant.

Care should be taken to see that radiants are placed in their proper positions in the heater to avoid flame impingement at or near the bottom of them, which frequently results in incomplete combustion.

As is the case with ranges, some space heaters are designed to use separate burners for natural and manufactured gas. In this case the natural gas burners should be substituted.

Pilots on space heaters are usually capable of adjustment. These should be regulated so that the gas at the

burner is ignited immediately upon opening the gas cock.

Water heaters are usually equipped with adjustable orifices. If a proper adjustment of the gas supply cannot be obtained, the spud should be replaced by one having the proper size orifice, or an orifice adapter should be used.

WATER HEATERS

Orifices in instantaneous water heaters are of the fixed type and the spuds containing them should be replaced by those having orifices of the proper size.

Few water heaters are supplied with pilots having adjustable orifices. The pilot flame is usually lighted and the pilot cock regulated to give a flame of the proper height, and no further attention is paid to it since it remains in continuous operation. At least one type of safety pilot is equipped with a fixed orifice which must be changed for natural gas.

Many makes of water heaters are designed to use separate burners for natural and manufactured gas. In such cases the proper burner equipment for the type of gas to be utilized should be used.

The A. G. A. Approval Requirements for Gas Water Heaters specify that all automatic water heaters shall be equipped with a draft hood, prescribing also construction and performance tests to be applied to such devices to insure their effective performance. Consequently, every automatic water heater should have a draft hood when connected to a chimney flue.

Dampers should never be used in the flue connection from a gas water heater. Where found, they should be removed after informing the customer of the possible effect upon the performance of the appliance, if partially or completely closed.

Many central heating gas appliances, especially boilers, are supplied with separate burners, mixers, and pilots for manufactured and natural gases. In converting such units from the former to the latter gas, it is essential that the changes necessary to secure satisfactory performance be made. With one or two makes of boilers, the natural gas burners are also placed a greater distance below the heating surfaces than is the case when using manufactured gas equipment.

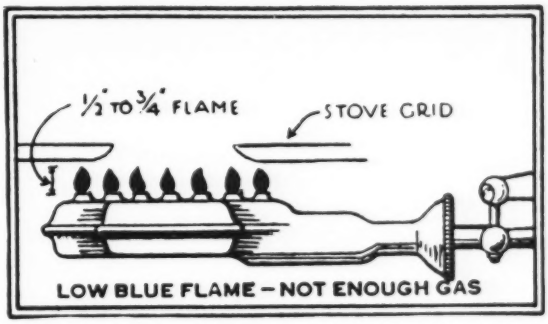


Fig. 3—The low blue flame here is caused by not enough gas

CENTRAL HEATING APPLIANCES

Boilers are generally equipped with fixed orifices. Consequently to convert such an appliance to natural gas, it will be necessary to remove the spuds and replace them with others having orifices of the proper size, which is the most satisfactory method, or ream out the orifices and insert an orifice adapter. Peening the orifice down to secure the proper gas input rating to a burner should never be done, unless the orifice is peened closed and then properly redrilled straight and exactly in the center, and all burrs removed, and then only in cases of emergency where new spuds or orifice adapters are not available. Peening and redrilling of orifices, unless carefully done by an experienced fitter, is likely to greatly impair the safe performance of the appliance.

In the conversion of central heating gas appliances to natural gas it is assumed that they were properly installed to utilize manufactured gas.

This New Jersey residence is heated by the gas fired equipment shown in the illustration at the beginning of this article

"The Next Improvement We Make—"

"Without question, the next improvement we make in our home will be the addition of automatic heat. What kind? I really don't know. Oil burners have a lot in their favor, stokers have come right up to the fore and natural gas is putting gas heat right within our reach.

"I'll talk it over with Mr. Jones. He's the dealer who put the heating system in here. Whatever he says will be the thing. At any rate, you can bet I'm not going to go through another winter of inconvenience and uncertainty."

That's the actual statement of a Chicago home owner. It's typical of what hundreds of thousands all over the country would say if you asked them the question, "What improvement are you going to make next in your home?"

Naturally, when a home owner decides to install automatic heat, he wants to know all about it. He wants to know that when it goes in, it will serve right.

He wants a good company behind it, but more than that—far more than that—he wants a good dealer behind it. He wants a dealer who is part and parcel of his community, who is established there, ready to answer questions in a minute or give advice when it is needed.

The home owner wants to buy automatic heat just as he wants to buy an automobile or engage the services of a doctor. He wants to know that the man, whether doctor, automobile dealer or heating dealer, "knows his stuff."

In the case of the heating dealer, there is no question about his ability, his standing as a business man, and his knowledge.

The leading heating dealers of the country depend upon the pages of AUTOMATIC HEAT in DOMESTIC ENGINEERING to give them their information. They read it regularly.

AUTOMATIC HEAT

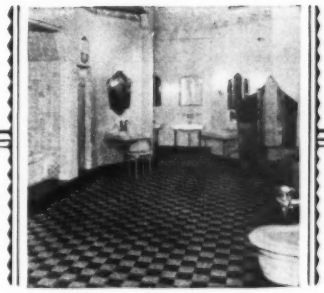
in

Domestic Engineering

1900 Prairie Avenue ✦ Chicago, Ill.

SUPPLY NEWS

FOR MANUFACTURERS, WHOLESALERS, SALESMEN



Spencer Heater Co. Sales Up 21 Per Cent in First Quarter

Sales of Spencer Heater Co., Williamsport, Pa., during the first quarter of the fiscal year ending March 1, showed an increase of 21 per cent over the first quarter of 1931, according to C. N. Tull, president of the company. Development of several new types of heating units and institution of an extensive sales campaign were cited as reasons for the increase.

Announces New Alignment of Fabricating Subsidiaries

A complete new alignment of its fabricating subsidiaries has been announced by the Phelps Dodge Corp. A new unit called Phelps Dodge Copper Products Corp., which will be headed by Wylie Brown, as president, will take over and operate the other fabricating divisions of the company's business. These include, among others, the British American Tube Division with mills at Bayway, N. J., manufacturers of brass, bronze and copper pipe.

Phelps Dodge Copper Products Corp. moved its offices on March 21 to 40 Wall street, New York City.

American Radiator & Standard Sanitary Corp. Nets $200,646 for Year

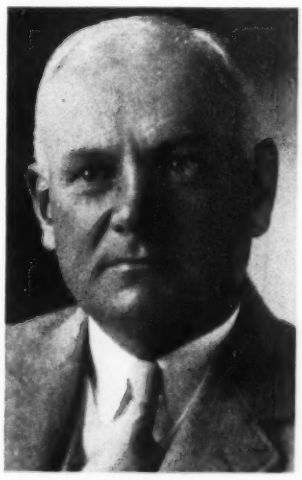
American Radiator & Standard Sanitary Corp., New York, N. Y., and subsidiaries, report for 1931 consolidated net income of $200,646, after interest, taxes and charges but before dividends. Preferred dividends were $503,991 and common dividends $7,111,100 during the year, leaving a deficit of $7,414,445. Net income was $6,641,797 in the preceding year, leaving deficit of $7,836,500 after payment of preferred and common dividends.

In their annual report, Clarence M. Woolley, chairman of the board, and Theodore Ahrens, president, point out that the corporation maintained a strong financial position during the year. The consolidated balance sheet shows cash and bonds to the amount of $21,208,869 at the close of 1931.

Depreciation was charged at customary rates against profits of all companies showing net profit. Such charges were not made against companies showing deficit. During the year price adjustments of inventory were approximately $1,809,662. Of this amount $569,287 was charged to reserves and the balance to operations. During the year American Gas Products Corp. was organized for sale of gas fired boilers and radiators, domestic hot water heaters and for the further development of gas fired equipment, the annual report states. It is declared that the demand for this type of equipment has shown an increase.

W. K. Glen Appointed Divisional Manager in Chicago for Crane Co.

William K. Glen, formerly advertising manager of Crane Company, Chicago, has been appointed divisional manager in charge of the Chicago district for the company. Harry L. Delander, formerly assistant manager, succeeds Mr. Glen as advertising manager of the company.



William K. Glen

As Chicago district divisional manager, Mr Glen's offices will be at 156 North Jefferson street, Chicago. In his new capacity, he will direct sales development and merchandising plans in the Chicago territory both of plumbing and heating materials to the trade, and valves, fittings and steam specialties to industries.

Mr. Glen is just completing his twenty-eighth year with the company. He entered its employ April 4, 1904, at Spokane, Wash. He became manager of the Spokane branch in May, 1909. He served in this capacity until January, 1922, when he came to Chicago as advertising manager.

In his ten years as advertising manager, Mr. Glen has directed the company's national advertising which has helped popularize the color bathroom, improved designs for fixtures, careful planning and arrangement of bathrooms and more than one bathroom in the house. Also, he has directed the company's business paper and direct mail advertising.

Mr. Glen has always been an advocate of fullest cooperation between manufacturer, wholesaler and contractor in the plumbing and heating industry. Perhaps his most often repeated point of policy has been that no

one element of the industries with which his company dealt could progress and grow unless all elements progressed and grew.

New Directors Named for Fairbanks, Morse & Co.

Arthur Andersen of Arthur Andersen & Co., Thomas McMillan, president of the Canadian Fairbanks-Morse Company, Ltd., C. H. Poppenhusen and F. C. Dierks were elected directors of Fairbanks, Morse & Co., Chicago, at the recent annual meeting of the company's stockholders. They fill vacancies caused by the resignation last year of W. S. Hovey, W. E. Miller, F. M. Boughey and H. W. Fenton. F. C. Brooks a vice president of the company, was made executive vice president.

U. S. Radiator Corp. Moves Boston Office

The United States Radiator Corp., Detroit, Mich., has moved its Boston, Mass., branch offices to new quarters at its assembling plant, located at 233 Vassar street, Cambridge, Mass. Ward Hillman is manager of the branch.

Wholesale Firm Sold at Auction

The James Barrett Mfg. Co., of Boston, Mass., plumbing and heating wholesale firm, was sold recently at public auction.

Babcock & Wilcox Tube Co. Opens Detroit Office

The Babcock & Wilcox Tube Co., Beaver Falls, Pa., has opened a new branch office in the Ford building, Detroit, Mich.

J. E. Polhemus has been appointed district sales manager, in charge of the Detroit territory. Mr. Polhemus was formerly assistant vice president and district sales manager of the Detroit sales branch of the Associated Alloy Steel Co., Cleveland, Ohio.

Appoints New Distributors

The Permutit Co., New York City, manufacturer of domestic water softeners and filters, has recently appointed a number of new distributors and dealers, as follows: Gilbert Utilities Corp., Rochester, N. Y.; Peoria Tent & Awning Co., Peoria, Ill.; Rogers Electric Co., Anderson, Ind.; Evans Electric Co., Bloomington, Ind.; R. B. Hinkle, Logansport, Ind.; Marion Refrigeration Co., Marion, Ind.; E. T. Corcoran, South Bend, Ind.; Central Jersey Cornell Utilities Co., Plainfield, N. J.; Joseph O. Chrystal Co., Summit, N. J.; Heating Units, Inc., Elmira, N. Y.; Morris Hardware Corp., Lockport, N. Y.; Geo. L. Starks & Co., Inc., Saranac Lake, N. Y.; J. R. Sheehan Co., Schenectady, N. Y.; Hunting Supply Corp., Watertown, N. Y.; Geo. N. Clark, Mt. Vernon, Ohio; L. C. Martin, Willoughby, Ohio, and R. R. Reeser, Reading, Pa.

Babcock & Wilcox Co. Nets Profits

Babcock & Wilcox Co., Barberton, O., reports net profit of $223,169 in 1931, equal to 98 cents a share, against net of $2,067,740, or $9.11 a share in 1930.

Death of Eben M. Byers

Eben M. Byers, chairman of the board of the A. M. Byers Co., Pittsburgh, Pa., died on March 31 of radium poisoning at the Doctors Hospital, in New York City. Mr. Byers had been in the hospital for about a month.

Born in Pittsburgh 52 years ago, Mr. Byers lived there all his life. He was the son of the late Alexander M. Byers, founder of the A. M. Byers Co. He was graduated from St. Paul's, at Concord, N. H., and from Yale in 1901. In 1902 and 1903 he was runner-up in the national amateur golf championship, and in 1906 he won the championship. Mr. Byers joined the A. M. Byers Co. immediately upon his graduation from college. He was a bachelor and lived at 905 Ridge avenue, Pittsburgh. His clubs included the University, Pittsburgh, Duquesne, Pittsburgh Golf, Pittsburgh Athletic and the Allegheny Country clubs of Pittsburgh, and the Turf and Field, Piping Rock and Links, of New York.

Surviving are a sister, Mrs. J. Denniston Lyon, of Pittsburgh, and a brother, J. Frederick Byers of Sewickley, Pa. Funeral services were held on April 2 at the home of Frederick Byers, with burial in Allegheny cemetery, Pittsburgh.

Is Named Distributor for Tube-Turns, Inc.

D. H. Skeen & Co., 1 North La Salle street, Chicago, have been appointed distributors in the Chicago territory for Tube-Turns, Inc., of Louisville, Ky. The D. H. Skeen & Co. are also distributor for Bonney Forge & Works of Allentown, Pa., and the new addition rounds out its line of fittings for welding work.

Increase Capital Stock

The Parker Freezer & Machine Works, Inc., of Catskill, N. Y., has increased its capital stock from $50,000 to $300,000. This concern was formerly known as the Catskill Foundry & Machine Co.

Appoints New Distributors

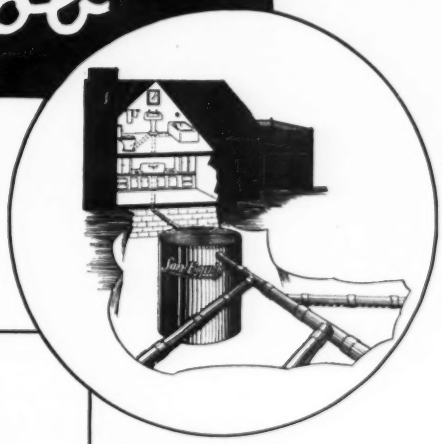
International Burners Corp., New York City, has just appointed several new distributors in a number of the larger cities, according to J. H. Hassinger, sales manager Among the cities where franchises have been granted are Chicago, Ill., Boston, Mass., Baltimore, Md., and Washington, D. C.

Airtherm Mfg. Co. Buys St. Louis Company

The Airtherm Mfg. Co., has purchased the assets and business of the Skinner Bros. Mfg. Co., Inc., and will continue to manufacture all of its products at 1474 S. Vandeventer Ave., St. Louis, Mo. These products include centrifugal fan type unit heaters for floor mounting, for horizontal suspension and for vertical suspension as well as propellor type fan suspended unit heaters, roof ventilators, sheet metal, blow piping and dust collecting equipment. A. W. D. Weis is president of the Airtherm Mfg. Co. with R. J. Tenkonohy, vice president and G. H. Everett, secretary. The above together with Fred A. C. Skinner and Henry B. Weis comprise the board of directors.

Talk the Most Important Part of the Unsewered Job

- a Complete . . . Disposal System



THE most expensive bathroom and kitchen fixtures are useless IF you can't get rid of the sewage. For the success of your unsewered plumbing job depends upon a complete disposal system.

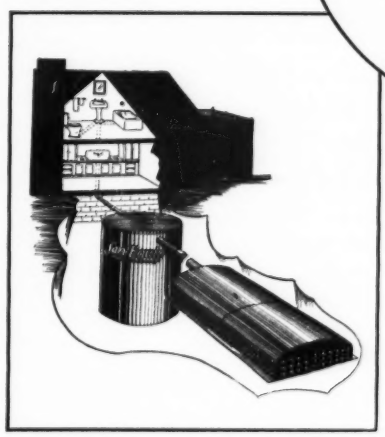
For the good of your own business, as well as for the comfort and health of your customers, sell a complete disposal system—a first rate system—both tank and drainage. Here's how you profit:

1. *You make extra profits from the sale of both tank and drainage field.*
2. *It is easier for you to sell quality fixtures throughout the entire job, removing cut-price competition.*
3. *You build good will that brings you new customers.*

You can recommend San-Equip Systems with confidence. San-Equip is the largest producer of septic tanks. San-Equip is the only nationally advertised, trade-marked system. San-Equip supplies an adequate field service to help you with your problems. And San-Equip has been approved by leading health officers everywhere. In fact, San-Equip's leadership in this field is so firmly established, that over 50% of the sewage disposal systems installed by leading plumbers in the United States bear the San-Equip Trade Mark.

Get the full facts about San-Equip today. Go after the big suburban plumbing market that is open to you. By offering complete San-Equip systems you will limit competition and will find increased profits for 1932.

Mail the Coupon » » » for Complete Information



★A Certificate of Approved Equipment backed by the largest manufacturers of home disposal systems accompanies every San-Equip System as a permanent record of the Installation.

The San-Equip System above consists of a scientifically designed San-Equip Septic Tank and a San-Equip Drain Pool. This is an ideal system where the soil conditions are favorable and where there is no danger of water supply pollution. The Pool provides necessary storage capacity and drainage area, is easily installed, saves labor and materials, and has many advantages over home built pools.

At left is a San-Equip Septic Tank with a Drainage Field of San-Equip Filter Pipe. An improved, unbreakable pipe, perforated to increase the drainage area 12 to 20 times per foot over the ordinary tile. Tight joints prevent clogging and preserve alignment. Lays quicker with no breakage. Fittings permit a varied layout.

San-Equip ★Certified SEWAGE DISPOSAL

THE SAN-EQUIP CO.,
724 BRIGHTON AVE., SYRACUSE, N. Y.

Please send me full details about San-Equip Sewage Disposal Systems, and your plans for getting more business and increased profits from the suburban market.

Name.....

Address.....

City..... *State*.....

IN every State in the Union, this war cry will resound as athletic young America limbers up for summer sports.

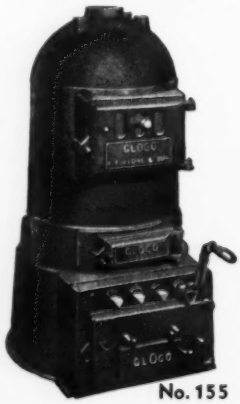
And in practically every State there are Gloco Wholesalers ready to help you rush aid to the bathers with

THE WORLD'S LEADING TANK HEATER

This tank heater season, line up with Gloco. Share in the business and the money to be had by installing this famous hot water machine.

46 different sizes — from 40 to 5200 gallons capacity — each guaranteed to 125 pounds working pressure and tested to 300 pounds hydrostatic pressure.

If *your* jobber doesn't handle Glocos, he's the exception, not the rule. Send us his name quick! We want to make it easy for every plumbing and heating contractor to get Glocos and know the profits in the Gloco selling plan.



No. 155

EVINS F. GLORE & SON
Grand Central Terminal Building, New York City

TRADE MARK
GLOCO
RED BAND TANK HEATERS

Acquires Business of International Radiator Co.

Governale Bros., manufacturers of radiator enclosures, Brooklyn, N. Y., have taken over the manufacture and sales of the International Radiator Co., of Portchester, N. Y.

Moves Chicago Office and Warehouse

The Kennedy Valve Mfg. Co. of Elmira, N. Y., has moved its branch office and warehouse at Chicago, Ill., to larger quarters at 1306-12 South Canal street. Improved shipping facilities are provided in the new location.

Declares Regular Dividend

Spang, Chalfant & Co., Inc., Pittsburgh, Pa., has declared the regular preferred dividend of $1.50, payable April 1.

Business Personals

IRVING L. JONES, Utica, N. Y., president of the International Heater Co., has been appointed as national counselor of the Utica Chamber of Commerce in matters before the United States Chamber of Commerce.

JAMES P. FERGUSON has been appointed assistant general manager of sales of the Reading-Pratt & Cady Co., Bridgeport, Conn. Mr. Ferguson has been associated with the company as sales engineer for the past ten years.

C. W. ADAMS has been appointed direct sales representative of W. A. Russell & Co., New York City, manufacturers of air and vacuum valves, in the Chicago, Ill., territory. Mr. Adams is a veteran in the heating industry, having been connected with the American Radiator Co., and later with the Hoffman Specialty Co., in the Chicago territory.

STUART L. CALHOUN has been appointed as sales representative in the East for the line of domestic water softeners manufactured by The Permutit Co. of New York City, according to a recent announcement of Oliver P. Harris, manager of domestic sales for the company. Mr. Calhoun has been associated for a number of years in specialty merchandising work. He will make his headquarters in New York City.

Stuart L. Calhoun

GEORGE W. HAMMILL, formerly division sales manager in the New York territory for the A. M. Byers Co., of Pittsburgh, Pa., resigned April 1, after an association of thirteen years with this firm. Mr. Hammill's future plans are indefinite.

WILLIAM J. BUTLER, formerly New England representative for the Josam Mfg. Co., Michigan City, Ind., has joined the Parker Freezer & Machine Works, Inc., of Catskill, N. Y., formerly known as the Catskill Foun-

TALL TOWERS SLOAN EQUIPPED

New York City has 90 business buildings 30 stories and over

• 76 of them use •

SLOAN FLUSH VALVES

The SLOAN equipped buildings shown on this page according to their relative heights are:

Empire State	(1256 feet)
Chrysler	(1050 feet)
Bank of Manhattan	(927 feet)
Chanin	(680 feet)
Waldorf-Astoria	(600 feet)
N. Y. Central	(567 feet)
Int'l Tel. & Tel.	(455 feet)
Graybar	(400 feet)

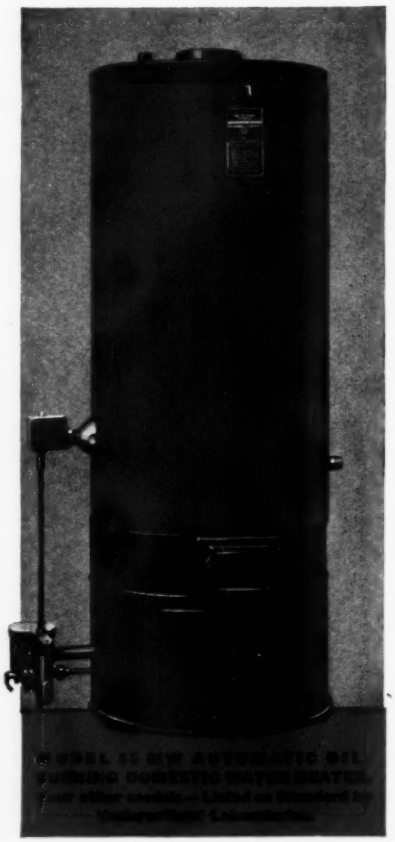
SLOAN VALVE CO • CHICAGO

And now . . . . for WARM-WEATHER PROFITS!

Spring Opens Profitable Season for Selling MW Automatic Oil-Burning Domestic Utilities . . .

Right now, when interest in home heating takes its seasonal backseat, MW dealers get ready for a profitable warm-weather business, by concentrating on the large, waiting market for *MW Automatic Oil-Burning Water Heaters.*

Every home, from the small cottage to the large residence with many bathrooms, is a prospect for this self-contained, matched water-heating unit, unfailingly automatic in operation, independent of electricity, supremely safe, *surprisingly economical.*

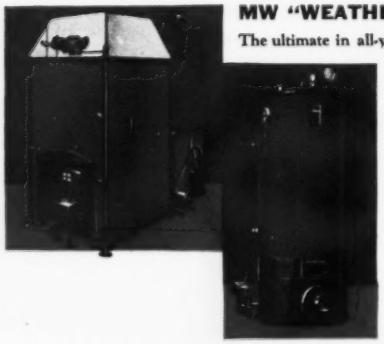


City dwellers tired of high gas bills, *country home owners* without present method of getting automatic hot water at reasonable cost, are logical prospects for this oil-burning water heater that cuts hot-water costs to 1/2 of gas and 1/7 of electricity.

Apartment houses, office buildings, schools, hospitals, factories, laundries, garages, public baths, barber shops, stores and other large users are interested in the commercial type of MW Automatic Oil-Burning Water Heater supplying hot water at costs far below gas or any other method.

Now is Your Time to secure the franchise for the money-making opportunities of selling *a complete line* of oil-burning domestic utilities of unrivaled quality and price appeal.—Including the famous MW "Weather Control" (heating in winter, cooling in summer), Automatic Oil-Burning Boiler Units for Steam or Hot-Water Heat, Automatic Oil-Burning Water Heaters, and Oil-Burning Cooking Ranges, the line has no slack season, but assures dealers of steady, all-year round business.

Details of the complete MW line, the liberal franchise terms, and the Factory's national and local advertising cooperation are yours for the asking.



MW "WEATHER CONTROL" UNIT

The ultimate in all-year comfort—winter warmth with healthful humidified air—summer relief with cooling air in all rooms. Uses present air ducts in walls, reduces basement ducts.—Listed as Standard by Underwriters' Laboratories.

MW BOILER UNIT *for Steam or Hot-Water Heat*

Amazingly efficient, because boiler and burners are designed to operate together. Thermostatically controlled; extremely quiet. More heat at less cost. Double-insulated. Beautifully finished in permanent lacquer.

AUTOMATIC **MW** OIL BURNING

WATER HEATERS

FOR ALL DOMESTIC AND COMMERCIAL NEEDS

Manufactured by MOTOR WHEEL CORPORATION, Heater Division, Lansing, Michigan

dry & Machine Co. Mr. Butler's headquarters are at 22 Cushing street, Wollaston, Mass.

JOSEPH A. BOHN, vice president and general manager of the Ames Iron Works, Oswego, N. Y., a division of the Pierce, Butler and Pierce Mfg. Corp., New York City, has again been chosen as a director of the Oswego Chamber of Commerce.

LOUIS TUCKER has been appointed New England representative for the Josam Mfg. Co., of Michigan City, Ind. Mr. Tucker has been associated with the Josam company for a number of years and comes to New England from the company's New York office. He will make his headquarters at 11 Beacon street, Boston.

H. D. STANNARD, JR., of Chicago, Ill., manufacturers' agent, recently moved his headquarters to a new location at 7435 Clyde avenue, Chicago.

JOHN GLYNN, formerly with the Boston, Mass., branch of Crane Co., has joined the Daly Plumbing Supply Co., of Boston. Mr. Glynn had been associated with Crane Co. for approximately eleven years.

R. L. M. TAYLOR has recently been appointed western representative for the Wheatland Tube Co., of Wheatland, Pa. Mr. Taylor will make his headquarters at Chicago, Ill.

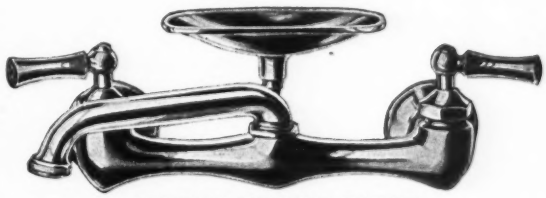
E. B. MAYNARD has recently become associated with the industrial equipment department of Petroleum Heat & Power Co., Stamford, Conn. Mr. Maynard has been engaged in engineering and engineering sales since 1921, and has been connected with the oil burner industry since 1925. He was formerly chief engineer of the Fuel Oil Engineering Co., New York distributors of the S. T. Johnson Co. He also served on the board of governors of the Greater New York Oil Heating Association. Later he was associated with the S. T. Johnson Co.'s factory. Previous to accepting his present position, Mr. Maynard was treasurer of the Purdy-Maynard Corp., distributor for the S. T. Johnson Co.

E. B. Maynard

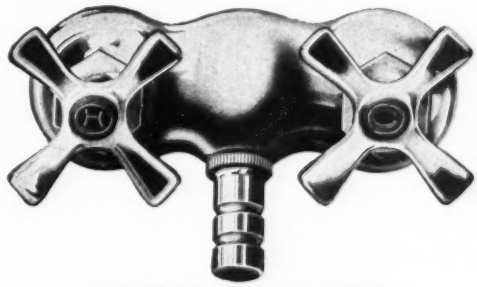
WILLIAM CARSTENSEN, formerly of the Wacco Supply Co., Inc., East Boston, Mass., has become associated with Walworth Co., of Boston, Mr. Carstensen is a veteran of the plumbing and heating industry, having been associated with Walworth Co. twenty-nine years ago. He left that company to go into business for himself and established the Wacco Supply Co. The Wacco Supply Co. recently assigned its business to its creditors. Mr. Carstensen will cover part of the Boston territory for Walworth Co.

G. A. PEPLE, JR., for the past nine years associated with Wiley & Wilson, consulting engineers, has opened offices in his own name in the American Bank & Trust Co. building, Richmond, Va. E. B. BOYNTON has succeeded Mr. Peple in the Richmond office of Wiley & Wilson.

CAPITOL



COMBINATION SINK FAUCET



COMPRESSION BATH FAUCET

COMPRESSION
LAVATORY FAUCET

COMBINATION
LAUNDRY TRAY FAUCET

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Central Supply Association Sees Business Gain

MEMBERS of the Central Supply Association departed from their meeting at Chicago convinced that the plumbing and heating industry will, in the not distant future, come out of the slump that has held it for the past two and one-half years. The more optimistic feeling resulted from the sound council offered by a number of the industry's leading executives who were called upon to express their opinions as to the future outlook for business in the construction industry and, in particular, in the plumbing and heating field.

This representative group of speakers which was made up of men associated with both the manufacturing and wholesaling branches of the industry, included Walter J. Kohler, president of Kohler Co., Kohler, Wisc.; John J. Hall, vice president, Standard Sanitary Mfg. Co., Pittsburgh, Pa.; John B. Berryman, president, Crane Co., Chicago; A. B. Pierce, executive vice president, N. O. Nelson Mfg. Co., St. Louis, Mo.; and W. E. Clow, president, James B. Clow & Sons, Chicago.

While no one of them anticipated an immediate increase in plumbing and heating business, they all felt that the worst of the depression was over and that the application of sound business methods, combined with intelligent, aggressive sales efforts, was the surest way of speeding the return of better business. A complete report on this phase of the convention appears separately on page 32 of this issue. This meeting, which was the 108th of the Central Supply Association, was held at the Palmer House, Chicago, on April 6 and 7.

The meeting was presided over by William J. Spillane of James B. Clow & Sons, president of the association, who in his opening remarks, explained that no outside speakers were on the program for the reason that leaders from the ranks of the industry itself were in a position to give information that would be of most value to the members in preparing for the "better business to come." The presiding officer was assisted by Harry Nelson, vice president.

Harry Nelson

The members went on record as favoring a plan explained by W. E. Price of the Knapp Supply Co., Muncie, Ind., which was used successfully in stimulating activity in the building industry in that city. It was pointed out that no one branch of the construction industry could hope to accomplish much by working alone, and, consequently, President Spillane announced his intention to appoint a committee to co-operate with the other branches of the building industry. L. R. Putman of the National Lumberman's Association explained that the lumber interests have already endorsed the plan and requested that the Central Supply Association co-operate.

The subject of Mr. Price's talk was "The Relation of the Building Industry to Prosperity." He pointed out that the building industry employs more men and women than any other industry, stating that one out of every ten persons in the country is dependent upon it for his living. The speaker showed, in developing his subject, that the building industry holds the key to the return of prosperity.

W. J. Spillane

He reminded his hearers that in 1920 and 1921 the majority of economists held the view that general business would never again reach the peak which was attained during the war period, but that even at that time the world was on the verge of the greatest business era in history. Mr. Price stated that this was due to the building industry leading the way. Continuing, the speaker

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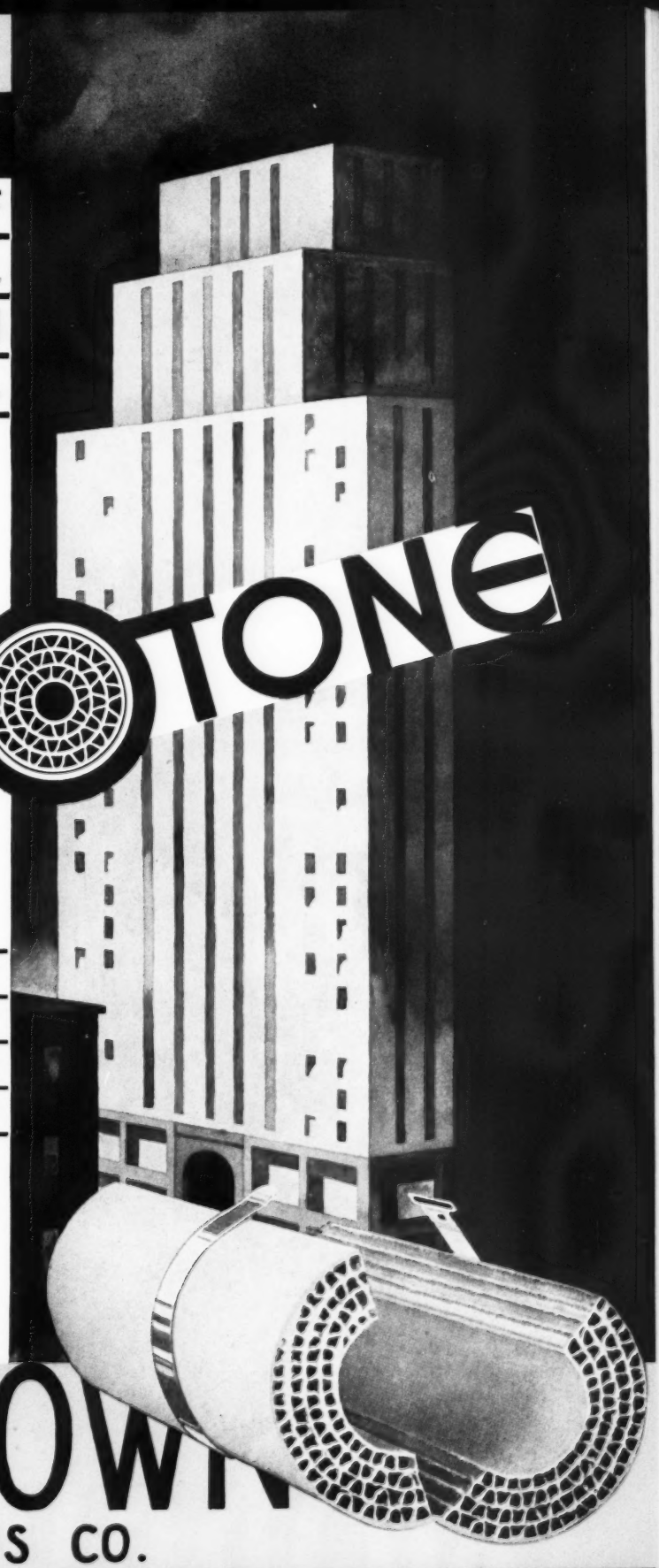
UNIVERSAL APPROVAL
ON THE PIPE INSULATION
OF ANY BUILDING » »



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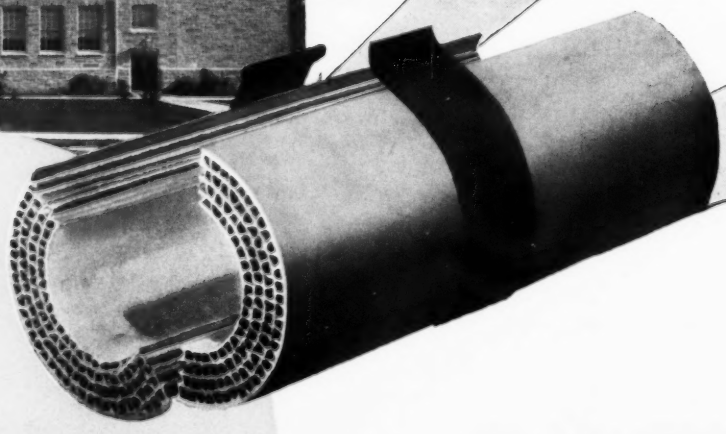

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pointed out that the potential business of the building industry is from six to ten billions of dollars per year. He said that five billions of dollars is required just to keep existing buildings in repairs, and that approximately three billions of dollars is needed to provide dwellings for the one million marriages that occur in this country each year.

The people "killed the goose that laid the golden egg," the speaker said, when they took their money away from the building industry and put it in the stock market. "When that money comes back," he said, "building will increase. There is no lack of business. I could loan one million dollars in my town today if I had it."

Mr. Price said that in Muncie in 1931 the record for building permits kept pace with 1930, and that more new homes were built in that city in 1931 than in 1930.

"It is time that we stopped talking about charity and time that we face facts," Mr. Price remarked. "We could loan millions to the farmers and it would do no good. But, if we were to put more men to work it would help the farmer and everyone else.

"There is a demand for building and all that is needed to place men at work is money so that building can go ahead. I am an optimist in regard to the building industry and am positive it is going ahead."

E. I. Leighton of the Leighton Supply Co., Fort Dodge, Ia., delivered an interesting report on "The Strength of the Trade Practice Rules." Mr. Leighton explained that after approval in 1929 by the Federal Trade Commission, the trade practice rules for the plumbing and heating industry were revised and again approved by the commission in October, 1931. The revised rules consisted of six Group 1 rules and three Group 2 rules. "Group 1 rules," he explained, "are those that the commission finds to be in violation of the present statutes and laws and will, therefore, be enforceable against everyone and all companies within the industry." These six rules include the following: Rule 1. Inducing breach of contract; Rule 2. Misbranding; Rule 3. Misrepresentation; Rule 4. Price discrimination; Rule 5. Secret rebate; Rule 6. Selling below cost.

E. I. Leighton

"Group 2 rules are those that the commission has accepted as the expression of the industry," he explained, "and will, therefore, be considered in the nature of a code of ethics, and it must be expected that the industry will respect them as such." The Group 2 rules include: Rule A. Repudiation of contracts; Rule B. False records; Rule C. Past due credit information.

Robert Macfee

Mr. Leighton remarked that on April 4, 1932, the Trade Practice Conference division of the Federal Trade Commission reinstated the "split shipment" rule, which as approved reads as follows:

"The acceptance of orders for large quantities of industry products and then making small deliveries at quantity prices for the purpose and with the effect of discriminating unlawfully between different customers of the same class, is an unfair trade practice."

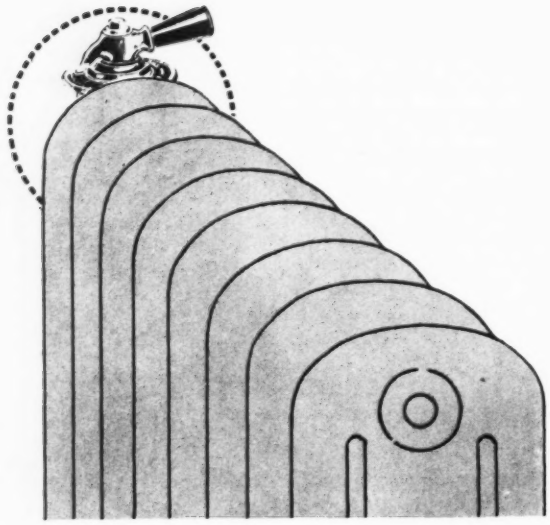
Mr. Leighton described a trip to Washington, D. C., made by himself and Max F. Burger of the Central Supply Association to attend a hearing on the bills introduced in congress by Senator Gerald P. Nye of North Dakota. The senator claims that these bills, which are known as S-2626 and S-2628, propose to afford a field for fair play in the business world, and are intended to free the channels of commerce from destructive "cut-throat" competition.

Mr. Leighton told of an attempt that is being made to amend the Nye bills if they are passed by congress, so that the bills will not apply to the minority. He said that if this happens the purpose of the bills will be nullified. Mr. Leighton urged his hearers to seek the support of their representatives in congress for these bills.

A motion was adopted at the meeting for reduced expenditures by government bodies. This followed a discussion of the subject by George E. Hoffman.

The co-operative merchandising plan of the association was approved as a permanent activity at the meeting of the executive committee on April 5, according to the report submitted by Secretary R. Macfee. The report showed that the market development work has been carried on in more than fifty cities since it was started July 1, 1931.

Mr. Macfee's report showed that state meetings had been attended by Mr. Spillane, Mr. Burger and himself in nearly every zone in the territory covered by the association, and an endeavor made to leave a constructive message with those present. Credit bureaus have been contacted in every territory where work has been done and considerable assistance rendered those bureaus, according to the report.



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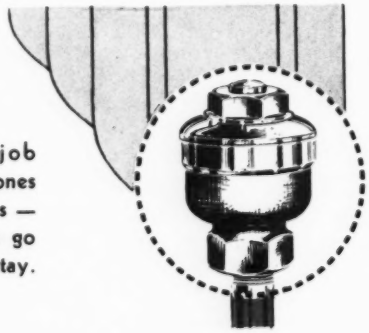

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Goulds Pumps, Inc., Omits Dividend

For the first time in the history of the firm, Goulds Pumps, Inc., Seneca Falls, N. Y., at a meeting of the board of directors, voted to omit the preferred dividend which is ordinarily paid in April. President Norman J. Gould in a letter to stockholders says:

"This action was taken to assist in maintaining the strong cash position of the company and is not to be construed as indicative of unfavorable financial developments. The company is in a satisfactory liquid condition and it is expected that with an upward trend of business through 1932 dividends on the preferred stock at the regular rate will be justified, and such disbursements resumed."

Death of Laverne W. Spring

Laverne W. Spring, chief chemist, Crane Co., Chicago, died at Chicago on March 23. Mr. Spring was in his 57th year at the time of his death.

He became identified with Crane Co. in 1904, serving first as chemist. Later he was placed in charge of the laboratories and in 1914 was advanced to the position of chief chemist and metallurgist. Mr. Spring was well known for his various articles on chemical and physical testing and engineering. He was the recipient of the John A. Penton gold medal for 1932 for his accomplishments in the foundry field, which was to be presented to him at the American Foundrymen's Association at Detroit, May 2. Mr. Spring was a member of the American Chemical Society, A.I.M.E., A.A.A.S., A.S.T.M., A.S.S.T., and the Institute of Metals (Great Britain).

St. Louis Chapter Will Help Draw Building Code

The March meeting of the St. Louis, Mo., Chapter of the American Society of Heating and Ventilating Engineers was one of the most interesting that has been held this year. Two of the national officers were present, namely, President Frank B. Rowley and Secretary A. V. Hutchinson. Mr. Hutchinson spoke on membership and finances, while Mr. Rowley presented a paper entitled, "Looking Forward in the Science of Heating and Ventilating." He described the method used at the University of Minnesota in determining the coefficients of heat transmission through various types of building walls and partitions.

Among those present, in addition to twenty-five local members and the two national officers, were Professor Turner of the David Rankin Trade school; Professor Langsdorf, dean of the school of engineering, Washington university; sixteen members of the heating and ventilating class at the David Rankin school, and an additional twenty other guests.

J. M. Foster, president of the chapter, reported on recent conferences he has attended in regard to the new building code for St. Louis. The chapter has been requested to submit a code covering heating and ventilating. The present code committee was reappointed to carry out this work.

One of the principal speakers at the meeting was Roscoe Nunn, senior meteorologist of the St. Louis Weather Bureau, who described methods of making weather forecasts and compiling charts of atmospheric conditions. He compared weather conditions in St. Louis

MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

REPORTS received during the past fortnight from the leading jobbing centers failed to show any change of consequence in conditions surrounding the plumbing and heating materials' market. Contractor demand continued at just about the same moderate level that prevailed during the preceding two-week period, and buyers for wholesale houses showed no inclination to order for other than their near-at-hand requirements. Executives of a number of the larger manufacturing and wholesale establishments in the country, in addressing the recent meeting of the Central Supply Association in Chicago, were decidedly optimistic regarding the future of the plumbing and heating industry. While no one of them predicted an immediate increase in business, they all were of the opinion that the worst of the depression had passed.

"The developments of the past month in the banking situation have been favorable, but the general course of business has been disappointing in view of the hopes raised by the financial improvement, and the usual seasonal expansion has not been realized," states the business bulletin of the National City Bank of New York in referring to trade conditions during the month of March. In the steel industry, although March is frequently the most active month of the year, operations continue at about the same rate as in January and February, namely 24 to 27 per cent of capacity, and automobile output has similarly moved sidewise upon a low level, in contrast with the usual increase. However, some of the restraints upon the 'Spring rise' appear to have been more accidental than otherwise, including the unseasonable weather and the postponement of automobile buying until the new Ford models are ready for inspection. As time will remove these difficulties, the seasonal rise, to the extent that they are factors, can be regarded principally as deferred . . . It is encouraging to note that an organization of the importance of General Motors Corp. takes the view that there is business to be done, and is employing a very large appropriation during the first week of April in a national selling campaign and exhibition of its products."

February shipments of steel heating boilers (stationary and marine), based on reports submitted to the Bureau of the Census by 72 identical manufacturers, were 204 units, as compared with 282 in January and 482 in February, 1931. Total shipments for the first two months of this year were 486 boilers, as compared with 1,046 for the corresponding period of last year.

February shipments of solid porcelain plumbing fixtures, as reported to the Bureau of the Census by seven manufacturers, comprising the entire industry, were 3401 pieces, as compared with 5114 pieces in January and 5388 in February, 1931. Total shipments for the first two months of 1932 were 8515 pieces, as compared with 11,840 pieces in the first two months of 1931, and 11,300 pieces in the corresponding period of 1930.

February shipments of vitreous china plumbing fixtures, including all vitreous chinaware which in regular practice is connected with a drainage system, as reported to the Bureau of the Census by 20* manufacturers, were 73,908 pieces, as compared with 80,737 pieces in January, and 172,613 pieces in February, 1931. Total shipments for the first two months of 1932 were 154,645 pieces, as compared with 459,207 pieces in the corresponding period of 1931. (*Of the 24 establishments operating 4 have discontinued operations).

with weather conditions in other large inland cities.

On a motion by F. J. McMorran it was voted to invite the national society to hold its 1933 annual meeting in St. Louis.

Upon the invitation of D. D. Zink, secretary of the Kansas City Chapter, a joint meeting of the two chapters will be held in the near future, possibly on April 16. The meeting will be held in Kansas City.

G. A. Helwig, chairman of the membership committee, presented the following applications: Walter E. Goetz, Dwight L. Moody, Harry Franklin Bray and Paul Leonard Reed. The following limited membership applications were also submitted: W. F. Maschmeier, Edward Thomas Clucas, C. E. Parmalee, Charles A. Pohlig, Ray C. Sanders and Harry E. Dehutzer.

Robert M. Rosebrough and J. W. Cooper were awarded prizes for having secured the largest number of new members during the past year.

Death of John T. Clancy

John T. Clancy, an executive of Worthington Pump & Machinery Corp., Harrison, N. J., died suddenly of a heart attack, March 9, while lecturing at the Engineers' Club, New York City, before a meeting of the American Society of Mechanical Engineers.

Mr. Clancy was born in New Brunswick, N. J., in 1890. He studied at Betts academy, and later at Bowdoin college where he was graduated in 1913, and at Catholic university. He became an instructor in mathematics and chemistry at the Army & Navy school, Washington, D. C. In 1919 he joined the Worthington Pump & Machinery Corp., and in 1923 became assistant manager of oil and gas engine sales, with headquarters at Buffalo, N. Y., the position he had held until his death. In July, 1931, his headquarters were moved to the Harrison, N. J., plant.

He is survived by his wife, Mary F. Clancy. Interment was at Arlington cemetery.

The Metal Market

	Apr. 11	Avg. Mar., 1932	Avg. Jan., 1931	Apr., 1931
PIG IRON—				
No. 2 foundry, Chicago	$16.00	$16.50	$16.50	$17.50
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb	1.50c	1.55c	1.55c	1.65c
Blue annealed sheets, No. 10, Pittsburgh, per lb	1.70c	1.70c	1.75c	1.85c
*Hot rolled annealed sheets, No. 24, Pittsburgh, per lb.	2.20c	2.20c	2.20c	2.25c
Galvanized sheets; No. 24, Pittsburgh, per lb	2.85c	2.80c	2.80c	2.85c
TIN—				
Straits tin (spot) New York	18.75c			
LEAD—				
E. St. Louis	2.90c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	11 c	Copper, light	2⅝c
Block tin pipe	13½c	Heavy crucible copper	3⅝c
Brass, light	1⅝c	Zinc, old	1 c
Brass, heavy yellow	2 c	Lead, heavy	2 c
No. 1 comp. red brass	2⅝c	Solder joints (close cut)	3 c
Heavy copper and wire	2⅞c		

NOTE: Prices are those quoted on Monday of this week.
*Comparisons are with old classification No. 24 black sheets.

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TRADE

NEWS OF PLUMBING AND HEATING CONTRACTORS

Georgia Master Plumbers Change Convention Dates

Announcement has just been made of a change in plans for the annual convention of the Georgia State Association of Master Plumbers. The new dates that have been selected are May 23 and 24, and the convention will be held at Albany, Ga. The Gordon Hotel will serve as headquarters for the meeting.

Minneapolis Plans "Home Beautiful" Exposition

To stimulate interest in home life and in the building, ownership, furnishing and decoration of homes, leading civic, business and trade organizations of Minneapolis, Minn., have joined in sponsoring a "Home Beautiful" exposition, to take place at the municipal auditorium, April 18 to 24. The definite purpose of the exhibition, according to Harry H. Cory, who has been appointed manager of the show, is to foster a community desire to build, own, improve and furnish homes and to augment the beauty, economy, comfort, convenience and efficiency of the average home and its surroundings. Tentative plans call for exhibits of plumbing and heating materials and fixtures and many other building products as well.

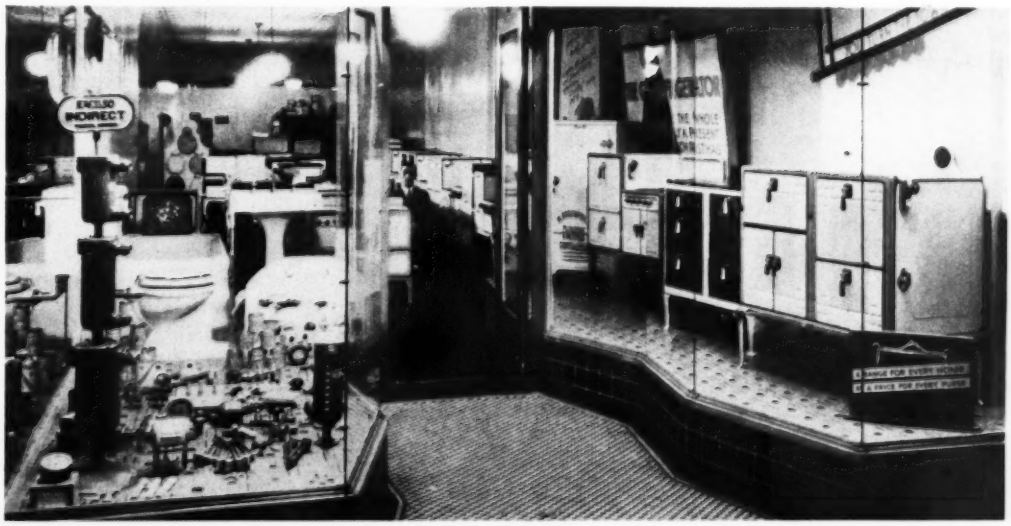
New Law in Virginia Prohibits Misuse of Funds Paid by Building Owner

One of the most far-reaching pieces of legislation aimed to improve business dealings in the construction industry was passed by the 1932 General Assembly of the State of Virginia. This new state law becomes effective in June. In substance it makes it a misdemeanor, punishable by fine or imprisonment in jail, or both, for the fraudulent retaining or use of funds paid by the owner to a contractor or sub-contractor for any other purpose than to pay those performing labor upon or furnishing material for the construction or repair of any building job.

The law was designed to make dishonest and unscrupulous operators pay their bills. It will not affect the honest contractor. In order to avoid being caught in a financial net, contractors will be forced to pay more attention to the preparation of bids to see that the original bids are bona fide to include all items of cost, overhead and profit.

By the enactment of this legislation Virginia becomes the third state in the United States having such a law, the other states being Michigan and Wisconsin.

"This law is calculated to have many wholesome effects upon the construction industry, some direct and



M. Greenfield, formerly engaged in the plumbing and heating business at 4503—13th avenue, Brooklyn, N. Y., has become affiliated with the Kings County Heating & Gas Range Co., of Brooklyn, and the merged companies have moved into the attractive new quarters pictured above. The new office and showroom are located at 5210—13th avenue. Mr. Greenfield has been engaged in the plumbing and heating business in Brooklyn for eighteen years

others indirect," says the Heating and Plumbing News of Virginia. The effects of the new law are listed as follows:

1. Protection of the honest general contractors and sub-contractors.

2. More carefulness in the preparation of bids to avoid taking work below cost.

3. Each job stands on its own feet, eliminating the financing of other jobs with funds due to sub-contractors and material men.

4. Eliminating the dishonest operator from the field, or forcing him to the higher level of honest competition.

5. Makes an adequate bookkeeping and accounting system a necessity among all general contractors and sub-contractors.

6. Provides protection to the owner, who is frequently uninformed in legal and technical matters and through such ignorance sometimes pays the same bill twice by operation of the lien law.

7. Puts the construction industry on a sounder plane, by proper accountability of funds received from every job.

TEXT OF STATUTE

The law is divided into two sections, as follows:

Section 1. Any contractor or sub-contractor who, with intent to defraud, shall retain or use the funds or any part thereof paid by the owner to such contractor or by the owner or contractor to a sub-contractor under any contract for the construction, removal, repair or improvement of any building or structure permanently annexed to the freehold, for any other purpose than to pay persons performing labor upon or furnishing materials for such construction, repair, removal or improvement, shall be guilty of a misdemeanor in appropriating such funds to his own use while any amount for which he may be liable or become liable under his contract for such labor or materials remains unpaid, and may be prosecuted upon complaint of any person or persons so defrauded, and upon conviction, shall be punished by a fine of not less than one hundred dollars nor more than two hundred and fifty dollars, or confined in jail not less than thirty days nor more than six months, or by both such fine and imprisonment in the discretion of the court.

Section 2. The use by any such contractor or sub-contractor of any moneys paid to him under the contract, before paying all amounts due or to become due for labor performed or material furnished for such building or structure, for any other purpose than paying such amounts, shall be prima facie evidence of intent to defraud.

Baltimore Association Holds Annual Election

At the meeting on March 31 of the Association of Master Plumbers of Baltimore City, Inc., the following officers were elected: Louis Adler, president; Morris Wolf, vice president; Samuel Baltimore, treasurer; Alex Walpert, secretary; and Isaac Roll, sergeant-at-arms. The directors selected were: Morris Wolf, chairman, William Pritzker, Rubin Goldman, Max Kleinman and Joseph Horwitz.

Plans are being laid for a banquet, at which time the new officers will be installed. Sol. Goldman is the chairman in charge of the banquet committee, assisted by Robert Frank, Abe Schweitzer and Isaac Roll.

President Adler, who was re-elected, read a report showing the accomplishments of the association during his past term and gave several suggestions and proposals that he intends to carry out during his coming term in office. Among them were the purchase of a home for the association where educational facilities will be available to the members, as well as entertainment and club amusements.

Colorado Convention Plans Progress

National Director Richard G. Thomas of San Antonio, Tex., will represent the National Association of Master Plumbers at the 35th annual convention of the Colorado Society of Sanitary and Heating Engineers, which will be held at Denver on April 26. A committee of Denver master plumbers will have charge of the annual banquet, entertainment and ball, and plans are under way to make this an enjoyable occasion.

"Anti-Peddling" Bill Given New Number

House of Representatives Bill No. 4680, known as the Goss Bill, has been replaced by a new bill designed to accomplish the same purpose. The new bill has been given the number H. R. 9921. In any communications with Congressmen regarding this bill, the new number should be used. The main purpose of the bill is to prevent the peddling of bids on United States Government contracts.

Pipe Corrosion Discussed at Meeting of London Engineers

The Institution of Heating and Ventilating Engineers of London, England, held an interesting meeting recently at which time the subject of "pipe corrosion" was discussed. A paper on this subject was read by A. C. Pallot, an associate member of the Institution.

Oakland Meet of Gas Appliance Society Features Talk on Merchandise Display

Widespread interest in merchandising gas appliances was reflected in the largest attendance of the year at the March 25 meeting of the East Bay Unit of the Gas Appliance Society, held in Oakland, Calif. Upward of fifteen merchant plumbers were present, their interest being centered largely in the talk of C. D. McClaughry, display manager of the H. C. Capwell Co., of Oakland, on "The Value of Display in Merchandising."

With the aid of lantern slides, Mr. McClaughry drove home at least two of the chief fundamentals dealing with the proper display of merchandise (1) Singling out and featuring one article at a time. (2) Showing the exact use or performance of a given unit. He scored his first point with slides showing an old style window loaded down with a little of everything, after which a modern window was shown, which focused the attention of the passerby. His second point was illustrated by views indicating the application of new principles to well known merchandise—notably the temperature control feature of the modern gas range. "In other words,"

said Mr. McClaughry, "our displays should dramatize our goods."

Officers chosen at this meeting were: T. J. Clark, president; T. E. Johnston, vice president; E. W. Kimmell, secretary-treasurer. Max Finzel was chosen to serve on the directing board to represent the merchant plumbers.

Officers Prepare for Connecticut Convention

Joseph E. Berger, Bridgeport, Conn., president of the Master Plumbers Association of Connecticut and William O'Dwyer, Fairfield, state secretary, are preparing for the coming convention of that organization on May 10 and 11. The meeting will be held in New Britain with headquarters at the Hotel Burritt. A news item in our last issue incorrectly listed the officers of the Connecticut association.

Maryland Masters Hold Annual Dinner-Dance

The annual dinner-dance of the Association of Master Plumbers of the State of Maryland, Inc., was held recently at The Lord Baltimore hotel in Baltimore. More than 400 people were in attendance, including the Hon. Howard W. Jackson, mayor of Baltimore, and numerous other civic leaders, and represenatives from the master other civic leaders, and representatives from the master ginia and New York.

The newly elected president, William H. Williams, made a short address of welcome and then turned the toastmastership over to Gus Wirth, chairman of the banquet committee. The toastmaster introduced the guests and after a short response by the mayor, all further speechmaking was barred.

Dancing took place between the courses and at the conclusion of the meal a number of excellent vaudeville acts were presented, which included a novelty bathing act under the direction of Sam Houck, a member of the association. Dancing continued until a late hour.

The committee in charge consisted of Gus Wirth, chairman, Allen W. Beam, Ira F. Belt, Theodore Bunnecke, Francis C. Dorsey, August V. Eidman, Joseph Gessler, George R. Hardesty, Samuel E. Houck, William A. Imbach, Frank J. Knell, August Malthan, Edgar E. McLain, John W. Monosmith, William F. Mylander, Charles R. Neeb, George L. Schubert, Walter Shaffer, Thomas J. Thaler, Charles Wachsmuth, Chester R. Weaver and Herbert B. Kiel.

Coast Counties Association Holds Banquet Meet

A highly successful meeting of the Coast Counties Merchant Plumbers Association took place in Salinas, Calif., March 26, when members and their wives enjoyed a banquet at the Jeffery hotel. Stanley B. Westcott of Soledad was again chosen president, while Ed Simpson of Pacific Grove was re-elected secretary-treasurer. Organization affairs, it was shown, are progressing satisfactorily. The members heard with interest the report of John M. LaDieu, executive secretary of the California State association, relating to the activities of the state and national bodies. Ed. Hokom, manager of the Peninsula association, also spoke on organization affairs, indicating the advantages of standing together during difficult times. The Coast Counties association draws its membership from Santa Cruz, Monterey, Pacific Grove, Salinas, Soledad and other communities in the Monterey Bay district.

Macoupin and Montgomery County Masters Meet

At the March meeting of the Macoupin and Montgomery County Master Plumbers' Association, which was held at Mt. Olive, Ill., the members heard an interesting talk on the subject of heating problems. The speaker was B. Niehaus, of the American Radiator Co.

N. A. M. P. Director Comes from "Wild West"

HIS friends wonder if, when P. W. Donoghue, president, National Association of Master Plumbers, appointed Harry L. Stevens of Hutchinson, Kans., as a member of the National board of directors, he realized with what a "wild west" character he was dealing?

The accompanying photograph shows how Harry looks when at home; or at least as he did during a recent week when his home town put on a "Pioneer Day Celebration." All the men in Hutchinson were expected to let their hair and whiskers grow and dress in clothes of the kind worn in the early days of the West. Automobiles were kept out of sight as much as possible, horses and wagons taking their place. Store fronts were temporarily remodeled to fit the occasion and old-time customs were revived.

Harry L. Stevens in costume

Mr. Stevens was general chairman of the affair. In addition to his interest in civic matters, and his work as a National director, Mr. Stevens is also an active leader in the affairs of the local and state master plumbers association. He is a past president of the Kansas State Master Plumbers Association and at that organization's recent annual convention was re-elected state treasurer.

Overlooking the Side Shows

"It is no especial credit to many of us who are involved in the chain of cooperative effort which bears fruit when the contractor performs a good service for his customers, that we have not been more alert to recognize the essential factor of the contracting business," says Old Bill Wise.

"The contractor has been encouraged to become a better bookkeeper, a better financier, a better mechanic, a better buyer and a better merchandiser, etc. That all of these things are important and desirable, most contractors agree.

"But the quality really essential for successful contracting seems to have been largely overlooked for these side-shows. The main tent in the contracting business lies within the realms of planning the job; the skillful organization and coordination of men, materials and time.

"Every successful contractor knows that he can lose everything, including his underwear, on a poorly organized job of work; even though he may recover his shirt from his profit on materials.

"It is not surprising that the successful contractor keeps his eye on the main tent and concerns himself with the side-shows as occasion requires and time permits;" says Old Bill Wise.

1509V

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New York City · Philadelphia, Pa. · Chicago, Ill.
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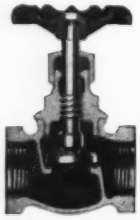
COMPRESSION STOP & WASTE VALVE



O-B No. 3 Line

Alert plumbing and heating contractors are taking to these New Compression STOP & WASTE Valves like "ducks take to water"; and with good reasons. These "small things to look for but big things to find" are proving very interesting: (1) swiveling disc (2) metal-to-metal tight joint between stem and center-piece (3) "centered" waste outlet (4) rolled rod instead of cast brass stem (5) larger handwheels attached with (6) nut instead of screw. Ask your Ohio Brass Wholesalesman about these special details; and don't forget to inquire about the Improved No. 3 Line Composition Disc, its the best ever.

The "PROFIT IN THE MAKE UP" *Line*

Contractor Displays at "Merchants' Show"

Hesse-Scharff Co., plumbing and heating contracting firm of Utica, N. Y., maintained an attractive display of plumbing and heating products at the recent "Merchants' Show" in that city.

Rhode Island Masters Plan Meeting

The Rhode Island State Association of Master Plumbers will hold its annual meeting at Providence, on April 19. The meeting will be held at the Dreyfus hotel.

Discuss Changes in Wisconsin Plumbing Regulations

"Plumbing Standards" was the subject of a meeting of master, journeyman and apprentice plumbers, held recently at Monroe, Wis. The meeting was held under the auspices of the Wisconsin state board of health, the Wisconsin Industrial Commission and the state board of vocational education. The meeting was for the purpose of acquainting plumbers with recent changes in plumbing practices, standards and requirements.

Peninsula Association Is Active

Phillip Brand is president of the Peninsula Merchant Plumbers Association, which was recently complimented by J. V. Young of San Francisco, president of the California state association, on the progress it had made during the past year.

Is Named Plumbing Inspector

At a recent meeting of the board of health of West St. John, N. B., Charles E. Fullerton was appointed plumbing inspector for the St. John sub-district. He succeeds the late William Kiley. For several years prior to assuming his new duties, Mr. Fullerton was in the employ of W. E. Emerson & Sons, plumbing and heating contractors, as journeyman and foreman.

Death of D. Harvey Budd

D. Harvey Budd, president of the D. H. Budd Co., plumbing and heating contracting firm of Bozeman, Mont., died on March 28. Mr. Budd was a member of the Montana Master Plumbers Association.

Death of William S. Gow

William S. Gow, well known master plumber of Dubuque, Ia., and a resident of that city for 40 years, died April 2, at the family home, 661 Harvard street. He had been ill for only a week. A Mason, an Elk and a Forester, Mr. Gow was active in community affairs. He was born in Rochester, N. Y., August 27, 1867. He is survived by three daughters and three brothers.

Contractor Appointed to Municipal Commission

Albert F. Ertman, Herkimer, N. Y., master plumber, has been appointed by Mayor Sauer of that village to the Herkimer Municipal Commission, a non-partisan board which handles the village electric light and water plant and other municipal affairs. Mr. Ertman was twice mayor of Herkimer, and has been active in village and civic affairs for many years.

Describes Air Conditioning in Office Buildings

Design and operation of air conditioning systems in several of the larger Los Angeles business buildings were explained and pictured to those present at the March meeting of the Southern California Chapter, American Society of Heating and Ventilating Engineers. The gathering was held in the Engineers' club, Los Angeles, and, because of the interest in the topic under discussion, was made public to all connected with the industry.

Following a dinner, the meeting was given over to talks by Ralph E. Phillips and Donald T. Robbins. Mr. Phillips spoke particularly on methods used in zoning air conditioning plants to care for various exposures of the building. Mr. Robbins outlined the prime considerations in designing and installing air conditioning equipment and told of the diversity of methods of distributing air dependent upon the type and occupancy of the structure to be conditioned.

Coincident with his talk, Mr. Robbins showed slides of local building installations to illustrate his points. He defined air conditioning as "the proper control of air quantity, air purity, air temperature, air motion and air distribution." Requirements of a successful system he detailed as "1—Proper computation of the maximum and average load. 2—Adequate plant. 3—Sufficient air for ventilation. 4—Introduction of air in such a manner as to insure proper mixture and sufficient air in motion without drafts. 5—The ability to quickly remove all the air in the conditioned space and replace it with fresh air. 6—A complete and automatic control of temperature and humidity. 7—Proper zoning for different conditions, exposures and occupancy."

Bureau Cuts Prices on Bookkeeping Materials for Contractors

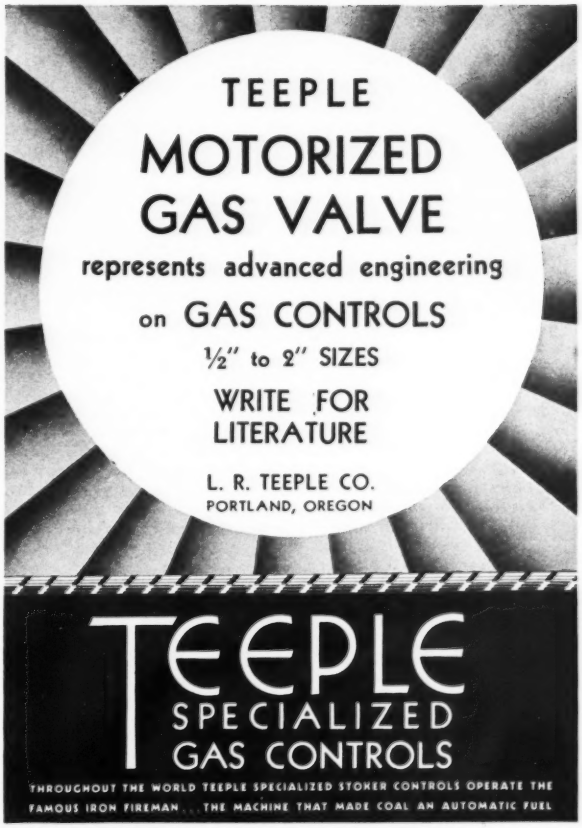
In line with its efforts constantly to improve and simplify its bookkeeping and cost accounting supplies, the Plumbing and Heating Industries Bureau, Chicago, has announced certain changes and revisions in its materials.

Instead of offering one general accounting system and three cost accounting systems known as complete sets Nos. 00, 0, 1 and 2, the Bureau will hereafter offer only two sets which will be known as Set No. 00 and Set No. 20.

Set No. 20 will be known as the Bureau's Revised Cost Accounting System. At a reduced price, it embodies practically everything that was formerly contained in the No. 0 Set and much material that was included in the more expensive sets.

Set No. 00 is unchanged. This is a double entry bookkeeping system without the cost accounting features. It is intended chiefly for the smaller shop where the proprietor is his own bookkeeper.

"The changes made in the Bureau's bookkeeping sets are in no sense a curtailment, but a simplification," says Joseph G. Hildebrand, secretary-manager. "I am glad to be able to state that reduced printing costs have made it possible for the Bureau not only to offer the No. 20 set for one-third less than any similar set has ever been sold before but have also made it possible for the Bureau to cut the price of its bookkeeping supplies all down the line.



Top row, left to right: William Gibb, Boyes Springs; James F. Mauzy of Walnut Creek, vice president, Northern California Federation; Alexander Coleman of San Francisco, past president of Federation; W. H. Picard, Oakland; Barney Newman, Fresno; H. Porter Wilson; C. C. Anderson; F. F. Elliott; Morris Greenberg; Donald O'Hair; E. W. Kimmell and L. W. Sweeney, both of Oakland; J. T. Mailer, Santa Rosa; C. J. Stewart, San Francisco, George Mitchell, Santa Rosa; R. M. Silknitter, manager, Crane Co., Oakland; Hal Sales, secretary Plumbing and Heating Club, San Francisco; J. W. Rankin, Oakland. Bottom row, left to right: Marino Crinella of Petaluma, president Sonoma County Merchant Plumbers Association; Charles A. Merritt, San Jose; A. M. Fitchenmueller, Danville; John M. LaDieu, executive secretary, California state association; Gus Marcy, Sonoma; (back) Robert Allmon and J. V. Young, president, California state association; (front) Thomas F. Leary and W. H. Rainwater all of San Francisco; Miss Marie Bunce, Mrs. Jack Camp, Miss Virginia Stewart and Mrs. J. V. Young, all of San Francisco; R. P. Olsen, Oakland; J. J. McLeod and Jack Camp, both of San Francisco; Frank Hudson, Fresno; W. J. Turner and Harry Callahan, all of San Francisco

Trade Problems Threshed Out as North California Plumbers Meet

The Northern California Federation of Plumbing and Heating Industries entered its second year with one of its largest and in many respects most successful conference meets when master plumbers from northern and central California and executives and their sales forces representing manufacturers and jobbers gathered at Sonoma Mission Inn, Boyes Springs, March 12 and 13. This, the fourth conference, was sponsored by the Sonoma County Merchant Plumbers Association, whose members and their wives provided a program packed with profit and pleasure. Another factor contributing to the success of the occasion, particularly the golf tournament on Sunday, was the fact that the Plumbing and Heating Club of San Francisco and the Bay Cities, held its annual outing and March tournament in conjunction with the federation meeting.

The executive session for master plumbers only was called on Saturday afternoon, when many points of timely interest and vital importance to the master plumber were discussed. One of these points was concerned with the recent decision of the California State Supreme Court which provides that material cannot be removed, when once installed, except with the consent of the owner or the mortgagor, provision for which must be arranged in all cases of time-payment installations.

The now two-year-old law providing that California contractors be registered and licensed has been found to work to the distinct advantage of the established contractor, more especially in the case of the master plumber. Secretary Mauzy read the report from the state registrar of contractors, giving the number of licenses issued, suspended and revoked; it also set forth that in the aggregate $300,000 worth of work was involved in judgments pertaining to suspended or revoked licenses. It was generally agreed in the conference that, now that the law has been in force long enough to prove or disprove its worth, it has become a valuable ally to business by driving from the state the irresponsible, fly-by-night contractor.

Discussion of the subject "How to Combat the Competition of the Mail Order or Direct-to-You Houses," evoked lively comment and suggestion, much of which was crystallized in a letter from P. W. Donoghue of Boston, Mass., president of the National Association of Master Plumbers, read before the conference. In this letter Mr. Donoghue recommends that the industry as a whole shall concentrate on certain highly competitive items, to the end that the retailing branch may meet successfully the competition of the "direct-to-you's."

COLLECTION METHODS

The question of the best method for collecting bad accounts came in for a generous measure of discussion. President Alexander Coleman advised strongly against letting bad accounts run too long before they are recognized as such. W. H. Picard of Oakland also spoke forcefully on the subject. It developed that a highly successful method now in effect in San Francisco and Oakland and one that has been adopted by the associations in both cities, is that of subscribing to the service of a collection company; this company furnishes a series of form letters sent out at intervals, each letter being more severe than the last. If the final letter fails to bring the desired reply, the addressee's name is turned in to the agency which then enters suit for the amount of the bill.

The discussion of trade subjects was concluded by the election of officers. Harry G. Newman of Oakland, formerly vice president, was chosen for president; James F. Mauzy of Walnut Creek, former secretary of the federation, was elected vice president; J. V. Young of San Francisco is the new secretary; and J. B. Hawley of Sacramento is treasurer. The directing board, in addition to these officers, consists of P. E. Brand of Redwood City, Charles A. Merritt of San Jose and Robert Duncan, Jr., of Oakland.

Attended by two hundred persons, the banquet was a gala affair, enlivened further by an eight-piece dance orchestra. President Crinella of the Sonoma County Association delivered a highly appropriate address of welcome. This was followed by a short talk from retiring president Coleman who expressed pleasure at the accom-

plishments of the federation during the year just closed, and appreciation of the loyal efforts of the officers. Mr. Coleman commented particularly on the noticeable improvement in the relations between the three industrial branches, which improvement he felt was due largely to the good offices of the federation.

THE NEW TREND IN MERCHANDISING

The principal address of the evening was given by F. F. Elliott of San Francisco, sales manager of Crane Co., who spoke on the new trend in merchandising. Mr. Elliott placed particular emphasis on the fact that there has been but one basic change in selling methods from the ancient days of bartering in the public market place, down to today; and that this change has come about only within the present decade. "The difference is this," he pointed out. "The merchant of the Middle Ages assembled his stock at his place of business, and there he met the buying public; but today, the merchant must go out to find his public. It follows, then, that nearly all articles of merchandise bought nowadays have been previously sold to the purchaser through manufacturers' displays, advertising, or other media; in short, the bulk of today's goods has been sold by reason of the merchant having gone out to his public instead of waiting for it to come to him."

The necessity for the merchant to go out to his public, Mr. Elliott explained, was due to the present day state of mind known as negative, or one that represses any urge to enter a store and be sold. "As manufacturers, wholesalers and merchant plumbers—we are situated alike, in that we all have to go out to find our buyers, interest them and sell them. . . . Primarily, the manufacturer and the wholesaler must depend on the master plumber to sell the individual ultimate consumer."

The speaker referred to the tendency in some parts of the country, for the jobber to sell the consumer direct, the consumer designating the plumber who will install the work. Mr. Elliott questioned the propriety of such selling, refusing to admit that the master plumber is incapable of functioning as a retailer. . . . Remarking on the decline in volume of new work during recent years, the speaker held that "this points definitely to the need for developing remodeling or modernizing work. Everyone owning an antique bathroom—and there are plenty of these—is a good, live prospect. . . . Now is the time," concluded Mr. Elliott, for the manufacturer, the jobber and the retailer to be in accord on merchandising ideas, especially in view of the many new thoughts that are being constantly developed for their mutual benefit."

BIG MARKET FOR ELECTRIC REFRIGERATORS

H. B. Rector of San Francisco, manager refrigerator division, H. R. Curtiss Co., drew an effective parallel between selling refrigerators and plumbing goods, pointing out that while 965,000 domestic refrigeration units were sold in 1931, this represents only 14 per cent of this country's homes that are wired for electricity. Realizing the advantage of getting into the home on repair work, enjoyed almost exclusively by the plumber, Mr. Rector urged the sale of electric refrigerators as a profitable line for the master plumber to take on. "Out of 102 of our representatives in northern California," said Mr. Rector, "the four most prosperous dealers are plumbers. There's nothing remarkable about this, considering that

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PIPE VISES

Open Side Vise

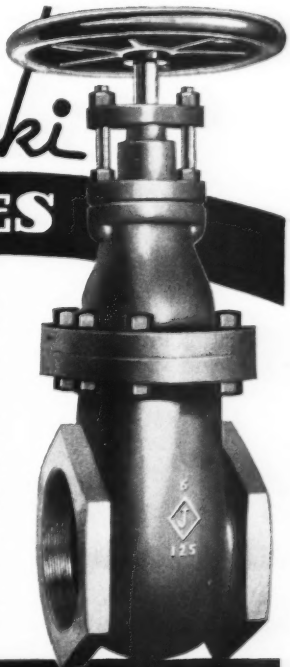
Heavy Duty Vise

ARMSTRONG BROS. Pipe Vises are quality tools with bodies of Certified Malleable Iron and jaws carefully milled from Tool Steel, hardened, tempered and tested. Screws are of special steel with double-wear threads. Hooks on the Standard (quick action) Vises are *unbreakable*, drop forged steel. Like the other ARMSTRONG BROS. "Better Pipe Tools," you can distinguish these improved vises by the Arm-and-Hammer Trade Mark. They are lighter yet stronger, clean-cut and handier than ordinary pipe vises.

Write for Catalog p-10 and Circular describing the ARMSTRONG BROS. Pipe Vise Saddle—a new type of pipe tool that you should know about.

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
323 N. Francisco Ave. CHICAGO, U. S. A.

Jarecki VALVES



The ideals of the founder of the business, jealously guarded for more than 80 years by countless tests and inspections, put more than design and workmanship into Jarecki Valves. Every Jarecki Valve is tested under actual working conditions, but with pressures far beyond their ratings.

That is why it pays, especially in times like these, to standardize on Jarecki Valves and Fittings.

Jarecki
MANUFACTURING COMPANY
ERIE, PA., U. S. A.

TAKE THE GRIEF OUT OF EMERGENCY REPAIRS

A gasket blows out on the main steam line—pitted surface on a boiler hand hole face prevents tight setting of the cap—a loose piston rams a steam cylinder head and the holding studs strip—a pump valve loosens in its deck setting and lets water past at the wrong time—accidental pressure increase in an open feed water heater cracks the shell wide open—a line break suddenly impairs the condenser vacuum—persistently loose foundation bolts set up vibration in an air compressor—rain water runs through the roof at a smoke stack.—etc.—etc.

POSSIBILITIES like these are ever present to the plant engineer, but seldom invite serious delays, much hard overtime labor and high expense for new parts if you have the Smooth-On Handbook of repair instructions on your desk and a small supply of Smooth-On No. 1 in the store room.

Hundreds of emergency repairs similar to the above, and many other routine maintenance jobs can be handled quickly, easily and cheaply with Smooth-On No. 1, which seals joints, cracks and breaks and holds equally well in any metal.

Smooth-On No. 1 expands in hardening and when metallized becomes as dependable as the metal which surrounds it. Engineers and shop men prefer the Smooth-On method because of the simple cold application and the speed with which a reliable and permanent repair is assured.

The Smooth-On Handbook

There are seven SMOOTH-ON cements, each for specific uses, and all explained and illustrated in the 136-page Smooth-On Handbook.

The directions and diagrams will post you well on Smooth-On, where to use each kind, how to apply for best results, and what to expect from the finished job, based upon pictures and data from typical applications.

Mail the coupon for a free copy and get Smooth-On No. 1 in 7-oz. or 1 or 5-lb. can from any hardware store or if necessary direct from us.

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your journeymen have access to the buyer's home. He is sent for and gladly admitted; whereas the salesman must ring the doorbell—which is often not even answered."

Federation president Harry G. Newman of Oakland, in the capacity of directing chairman of the forthcoming convention of the California State Merchant Plumbers Association, extended an invitation to all three branches of the industry to attend the gathering, to take place in his city on May 23, 24 and 25.

Sunday, the 13th, was featured by a joint golf tournament composed of federation delegates and members of the Plumbing and Heating Club, and their wives. Robert Allman and brother members of the club's golf committee, conducted the tournament. The Sonoma Mission Inn course is unique in that it is one of the few courses in the country that is sub-irrigated. Eight miles of pipe and 1,750 valves were required in the installation, 500 g.p.m. being required for irrigation.

Handsome prizes were awarded as follows: the ladies—Mrs. J. V. Young, low gross; Miss Virginia Stewart, both the blind bogey and the booby; the men—low gross tie between W. J. Turner and J. V. Young was decided in favor of the latter; the four-way tie between J. T. Mailer, E. W. Kimmell, Robt. Allmon and J. V. Young, for blind bogey honors was decided in favor of Mr. Mailer. W. H. Rainwater earned the booby prize, easily the most popular award. The distribution of prizes was made by President Emile Heymans of the Plumbing and Heating Club at the golf luncheon immediately following the tournament.

Among the scores turned in were the following:

	G.	H.	N.		G.	H.	N.
Mailer	106	37	69	Stewart	107	32	75
McLeod	103	24	79	Camp	101	27	74
Olsen	118	40	78	Fuite	106	32	74
Sweeney	97	35	62	Kimmell	105	36	69
Crinella	119	40	79	Leary	101	37	64
Rainwater	121	31	90	Allmon	106	35	71
Young	89	18	71	Callahan	104	30	74
Heymans	118	41	77	Wilson	104	18	86
Turner	89	17	72	O'Hair	93	18	75
Elliott	97	13	84	Mrs. J. V. Young	117	42	75
LaDieu	115	40	75	Miss M. Bunce	152	60	92
Anderson	101	15	86	Mrs. Jack Camp	143	60	83
Greenberg	107	32	75	Miss V. Stewart	154	70	84

Practical Problems in Mathematics

(Continued from Page 31)

For area "X"..... 2,000 sq. ft.
For area "Y"..... 3,750 sq. ft.

Total deduction ..... 5,750 sq. ft.

Area of building block.....29,750 sq. ft.
Deduction for areas..... 5,750 sq. ft.

Net roof area.....24,000 sq. ft.

Referring back to the plumbing code it is plain that a 12 in. pipe to the street sewer will be required.

Joseph McNamara, well known master plumber of Queens, New York City, is seriously ill of heart failure. The recent New York Master Plumbers Association convention in New York City was the first he had missed in twenty years.

Air Conditioning System Installed by Contractor

(Continued from Page 39)

(2) When the outside wet bulb temperature goes above 48 deg. Fahr., water from the city main is admitted to sprays and is overflowed to the sewer. It is presumed that the city water temperature, at this time of the year is below 48 deg. Fahr. This operation continues until outside conditions warrant the starting up of the refrigeration machine. As will be seen in the accompanying fan room layout, the air supply and return system is divided into two sections using the same dehumidifier and recirculating chamber, but separate fans, mixing chambers, by-passes, face dampers and controls on the heaters and dampers.

As noted on the layout, fan No. 1 supplies the first floor and mezzanine floor. Number two fan supplies the basement which includes the trust, investment and coupon departments. Number 1 fan is driven by a 10 hp. motor. This fan delivers 16,500 c.f.m. at 310 r.p.m. against static pressure of two inches. Number two fan is driven by a 5 hp. motor and delivers 8,000 c.f.m. at 465 r.p.m. against a static head of two inches.

The dehumidifier is 11 ft. 3 in. long by 4 ft. 8 in. wide and 6 ft. high. Two doors with glass panels measuring 16 in. by 30 in. permit access for inspection. Two marine lights furnish illumination inside.

The spray system is divided into two sections consisting of a total of 120 nozzles. The first section or cleaner section which is at the air entrance to the washer contains 60 nozzles and the second section or flood section on the coils contains the same number of nozzles.

The fin type cooling coils are gaged to withstand 2,000 lb. pressure and a total of 700 ft. is installed in 12 stands. Each stand is 14 pipes high with a length of 4 ft. 4 in. on 4 ft. centers. The tails of the inlet and outlet of each section are brought through stuffing boxes inside of the washer and are connected to inlet and outlet headers. Each section has a control valve on the suction and an expansion valve in the inlet. These headers are located in No. 1 fan by-pass chamber. Also in No. 1 fan by-pass chamber will be found the circulating pump for the spray chamber. This pump of the centrifugal type has a capacity of 175 gal. per minute against 25 lb. pressure.

The air filter in the by-pass for the No. 1 fan has a capacity of 14,800 cu. ft. per minute, and the filter in the No. 2 fan by-pass is the same type with a capacity of 5,800 c.f.m.

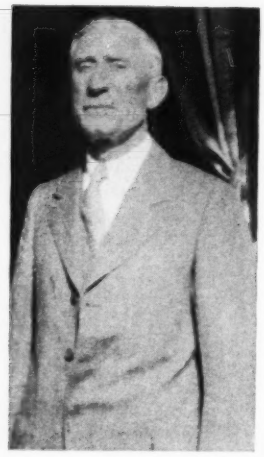
The tempering heaters in the fresh air intake consist of two batteries, one unit wide with 2 ft. 6 in. tubes, one row. Reheaters for the No. 1 fan are of the low pressure type consisting of one unit with tubes 6 ft. long in three rows. These total 12 sq. ft. Fan No. 2 reheaters also are of the low pressure type and consist of one unit with tubes 4 ft. 6 in. long in three rows. These total 9½ sq. ft.

To maintain guaranteed temperatures and humidities during summer operation a 50 ton compressor was installed. It has a capacity based on 70 deg. Fahr. condensing water and 35 deg. Fahr. evaporating temperature. The compressor is driven by a 50 hp. motor. The condensers are the welded type with 6 sections, 10 ft., 4 in. long and 14 pipes high. The refrigerator plant is located in the basement. Liquid and suction lines are run from this point to headers at the dehumidifier.

The automatic control system was explained under the various methods of operation, but in order to give a more complete description, the following is added. There are 8 control dampers, five operated thermostatically and 3 by switch controls. The thermostatically controlled dampers are as follows. For No. 1 fan, the washer face damper is 40 in. by 56 in.; the reheater face damper is 40 in. by 77½ in. For No. 2 fan, the washer face damper is 16 in. by 56 in.; the reheater face damper is 37 in. by 60 in. and the preheater face damper is 28 in. by 36 in. The dampers controlled by a 3-way switch are: a recirculating damper, 54 in. by 54 in.; a fresh air damper for the by-pass around the preheaters, 13 in. by 36 in., and a relief damper, 38 in. by 40 in.

The main supply and return ducts are figured for a velocity of 1,000 f.p.m. Air is admitted to various spaces conditioned at a velocity not exceeding 250 f.p.m.

The conditioned air for first and mezzanine floors comes in at grilles directly under the ceiling of the mezzanine floor and is returned through grilles in walls close to the floor at the first floor. All offices are supplied through ceiling outlets with returns at the side walls near the floor. The basement supply comes in at the walls near the ceiling and the returns are located in the walls near the floor. Air returns are at 250 f.p.m.



Wm. J. Olvany

New York Heating and Piping Contractors Favor Separation of Contracts

THE 37th Annual Convention of the New York State Association of Heating and Piping Contractors was called to order in the Pennsylvania Hotel, New York City, by William J. Olvany, president.

President Olvany called upon Robert Williams, president of the New York City association and vice president of the National association to give the welcoming address. President Olvany, in a short talk, outlined the importance of supporting the bill calling for separation of contracts on government work which was presented to the Congressional Committee on Public Buildings and Grounds, on April 7. Joseph C. Fitts, secretary of the National association in a brief talk, also emphasized the importance of this bill and urged his hearers to give it their support. He suggested that they write to their congressmen and senators, individually, so that this bill would receive a favorable report in the Committee meeting.

Mr. Fitts explained the remodeling campaign that has been called to the attention of the members in the different locals, and also outlined the work that the National association is doing to encourage business. He stated that last year 183 jobs had been reported as a direct result of the remodeling campaign, while 503 jobs have already been reported for this year. Last year only eight associations participated in the campaign, while this year fourteen are taking part in the campaign. Mr. Fitts also called attention to the National convention which is to be held at Detroit, May 16, 17 and 18, and stated that air conditioning is to be a major subject discussed at the convention. Mr. Fitts further stated that the convention program calls for reports by the Trade Promotion Committee and the Trade Relations Committee. A survey of the heating industry is also to be presented to the members for their consideration, this survey to be complete in every detail as to the average amount of work and average gross earnings of the plumbing and heating contractor.

William H. Taylor, past secretary of the New York City association, was called upon by President Olvany and his address, while extemporaneous, was forceful. It dealt largely with the registering of contractors. His plan was somewhat similar to that now in effect in California and he pointed out that the process of pre-qualifying contractors, particularly in public building work, would collapse of its own weight if it did not have the background of the registering of contractors who must measure up to a minimum qualification.

Robert Williams suggested that the New York state association should not be known as the Heating and Piping Contractors New York Association, but instead as the New York Council of Heating and Piping Contractors so that it would not be obligated to the National Association for dues as a state association.

President Olvany said that this problem would be taken up at the directors' meeting following the convention. He also explained that at the executive meeting held previous to the convention it was voted to reduce initiation fees to the former level of $10.

M. E. Durkee of the C. A. Dunham Co. spoke on certified heating and after pointing out that the three principal steps of certified heating were exportation, demonstration and realization, went on to show the amount of publicity that certified heating had received during the past year. He showed copies of general magazines, together with the bulletin of the New York Real Estate Board in which certified heating was mentioned.

Joseph C. Fitts

S. Lewis Land, educational director, reviewed the methods of getting business and pointed out the value of program merchandising.

After the business of the convention had been concluded, President Olvany named E. Folley, Robert Williams, and R. B. Miller as the nominating committee. The recommendations of the committee were unanimously approved and the following officers were elected: E. W. Tompkins of Albany, president; William H. Johnston of New York City vice president; Raymond Miles of Albany, secretary; Emerson J. Leary, recording secretary. Board of Directors: William Johnston, New York City; W. J. Olvany, New York City; J. W. Hickey, Olean; T. X. Donovan, Syracuse; P. W. Snyder, Utica; Edward Folley, Binghamton; Emerson J. Leary, Buffalo; Martin W. Utz, Rochester; and E. W. Tompkins, Albany. The newly elected president, E. W. Tompkins, was escorted to the chair and introduced by William A. Taylor, after which the meeting was adjourned.

W. H. Swihart Is New President of Southern California Federation

Discussion of problems pertinent to the industry by two interesting speakers, installation of a new president for a term of three months and extension of an invitation to members to attend the coming state convention in May were the highlights of the March meeting of the Southern Federation of Merchant Plumbers held March 19, at the California Country club, Los Angeles. One hundred members and guests were in attendance.

Speakers were H. B. Adams, of the Security-First National Bank of Los Angeles, who chose as his subject, "So-called Trust Deed Reform and the General Business Outlook," and Harry Lee Martin, vice president of the Pacific Mortgage Guaranty Co., Los Angeles, who spoke on, "Better Plumbing by Better Plumbers in Better Buildings."

Mr. Adams told of the efforts of a group in California to effect a change in the state laws which would place trust deeds in the same classification with mortgages. Success of this move, he pointed out, would seriously curtail building operations throughout the state, because, whereas a loan of 50 to 60 per cent of valuation is now made under a trust deed form of security, the majority of lenders would be inclined to furnish only 30 to 40 per cent of valuation on a building operation under terms of the amended law. He recommended co-operation by the plumbing industry in opposition to the change.

Mr. Martin decried the competitive conditions in the building industry in Southern California, which, combined with other factors, have caused erection of structures that required extensive repairs in from three to five years. Speaking from the standpoint of the lender, he said the situation must be remedied if land and building values were to remain stable. Contributing to the competition, he asserted, are the supply firms which place "dummy" contractors in business. Among remedies he prescribed individual effort of all established contractors in avoiding cut-throat competition, amendment of the state mechanics' lien law and bonding of all general and sub-contractors.

Thomas Hogan, Federation president, announced that he was presiding over the final meeting of his term and introduced his successor, W. H. Swihart, of Pasadena, who will serve for a three-months period. In accepting the office, Mr. Swihart named the next meeting place and date as the Elks' club, Los Angeles, April 16. In referring to the financial condition of the Federation, he remarked that the meetings were formerly held under the auspices of each member association until, in light of present business conditions, the burden became too great.

The Federation now sponsors its own meetings, raising expenses by the holding of "Kangaroo Court," during which supply men and members are fined for humorous supposed offenses. Some profit also accrues to the Federation through sale of dinners.

J. D. Speer, of Santa Barbara, vice president of the California Merchant Plumbers Association, extended an invitation to all Federation members to attend the state association's annual convention in Oakland, May 23, 24 and 25. The program had been completed and all financial arrangements made, he stated. He directed

Here's a conscientious objector!

He Refuses to buy DURIRON....

The Duriron Company, Inc.,
Dayton, Ohio, U. S. A.

Gentlemen:

I noticed the statement Atlas made last month in your ad in Domestic Engineering. Well, I can't recommend your Duriron Acid-Proof Drain Pipe - it's too acid-proof!

Rather thought I could use it for dripping Oil of Vitriol (fuming sulphuric acid to you) around my place here to sorta liven up things a bit, but the Duriron pipe carried it right through and into the River Styx without losing a drop.

So you see I can't use Duriron -- Hades wouldn't be such a helluva place if I did.

Satan

Well, the only comment we can make is to say that we're glad all of our business hasn't gone there.

THE DURIRON COMPANY, INC.
410 N. Findlay Street Dayton, Ohio

DURIRON ACID PROOF DRAIN-PIPE

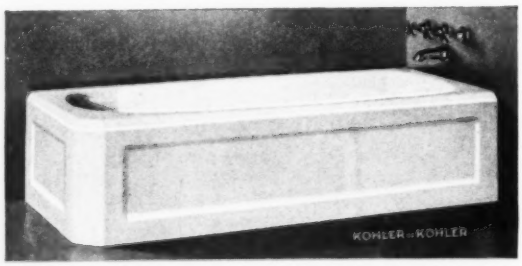
Now is the time to sell KOHLER MATCHED SETS

STYLES THAT ATTRACT SPRING MODERNIZING JOBS. . . . PRICES THAT HIT A NEW LOW!

RIGHT this minute, Kohler Matched Sets represent one of the best plumbing values you've ever offered your customers! The idea is new, the designs are new, and the prices are the lowest in years. Small wonder that plumbers with a watchful eye on modernization and replacement business are pushing these sets steadily!

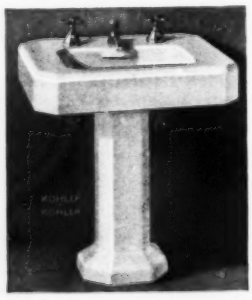
Kohler Matched Sets, as you probably know, have been perfected to meet a demand for unity in the bathroom decoration. This is another Kohler *first!* Down to the last detail—tubs, lavatories, and closets match each other.

It's easy to see that this Kohler idea comes when a business-getter is needed. Spring is the natural time for houses, apartments, offices to "fix up." And when you couple the appealing prices and the style of these Kohler Matched Sets with the craftsmanship principles back of each piece . . . you've got a tonic for these or any other days! Kohler Co. *Founded* 1873. Kohler, Wis.—*Shipping Point*, Sheboygan, Wis.—*Branches in principal cities*. . . . Makers of Kohler Electric Plants. Look for the Kohler trademark on each fixture and fitting.



METROPOLITAN *bath with wide, flat rim, recessed panels, parallel lines and perfectly balanced proportions.*

DOWNING *syphon-jet closet—notice flat surfaces and bevels, streamlines from front to base.*



WESTCHESTER *lavatory with wide rim, concealed overflow, and anti-splash edge. Exclusive vertical pedestal.*

KOHLER OF KOHLER

his invitation particularly to the ladies and told them of the special arrangements for their entertainment.

Prizes of golf balls were awarded to the winners of the golf tournament that had been held that afternoon on the California Country club grounds. For low gross scores, prizes were given to Claude Hickman, 85, and to Art Johnson, 79. Low net scores were made by F. F. Stokes, 89—16—73, and by E. H. McKeen, 95—24—71. Winners of the blind bogey were L. E. Ramey, 94—18—76, and Charley Hause, 100—24—76.

Colorado Masters Adopt Plan to Beat "Outside Competition"

A meeting of the Northern Colorado Master Plumbers organization was held recently in Longmont, Colo., with delegates present from Boulder, Fort Collins, Greeley and Loveland in attendance. The matter of "outside competition" was thoroughly discussed. It was felt that the best way for the established master plumber to meet this competition was for him to concentrate each week on the sale of some one particular item. The plan would be for the plumber to advertise these "weekly specials" in his local newspaper, using illustrations of the product with the advertisement.

Discuss Changes in Wisconsin Plumbing Regulations

Master, journeyman and apprentice plumbers of southern Wisconsin gathered at Monroe, Wis., recently, in a meeting sponsored by the Wisconsin state board of health, Wisconsin state industrial commission and the Wisconsin state board of vocational education. The purpose of the meeting was to acquaint all those connected with the trade with changes in respect to license requirements, standards and educational requirements applicable to apprentices, journeymen and masters.

Standards for Flanged Valves

A proposed American standard giving center-to-face dimensions for three kinds of ferrous flanged valves—wedge gate valves, globe valves, and angle valves—has been released for general criticism and comment and may be borrowed from the American Standards Association, 29 West 39th Street, New York, N. Y., by any one interested.

The proposed standard covers wedge gate valves in sizes from one inch to 24 inches O. D. (cast iron, for 125 and 250 lb. steam pressure, and steel, for steam pressures of 150, 300, 400, 600, 900, and 1,500 lb.); and globe and angle valves in sizes from one-half to eight inches (cast iron for 250 lb. steam pressure, and steel for steam pressures of 300, 400, 600, 900, and 1,500 lb.).

The draft was submitted in the fall of 1931 to Subcommittee 5 on face-to-face dimensions of ferrous flanged valves of the sectional committee on pipe flanges and fittings (B16). It was developed by the Manufacturers Standardization Society of the valve and fittings industry (M.S.S.), one of the sponsor bodies for the work of committee B16, and was adopted by the M.S.S. to become effective, in so far as its members are concerned, on July 1, 1932.

OUR READERS TELL US

An Opportunity in 1932

To the Editor:

I have looked over the copy of DOMESTIC ENGINEERING which carries the article "Spend for the Home in 1932." If this campaign is carried out aggressively by the building journals, I believe it will be very helpful to the building industry and that the plumbing and heating industries will share in the rewards that will come from this work.

As you know, this national association has been very much interested in aggressive merchandising in the modernization field during the past year, and from the results that we have obtained I am convinced that the heating contractor can make 1932 a good year if he goes into this field with energy and makes use of all the sales helps that are available to him.

(Signed) Joseph C. Fitts, Secretary,
Heating and Piping Contractors National
Association, New York City.

Finds Prospects in House-to-House Canvass

To the Editor:

I find that the majority of our industry are still trying to retain the wholesaler as such, and I am still of the opinion that unless the manufacturers oblige the chain stores, mail order houses, and other direct-to-you agencies to buy through the wholesaler it will be impossible for our industry to prosper.

One of my friends in Portland, Me., informed me this winter that Sears, Roebuck & Co., who have recently opened a store there, have started a house-to-house canvass. A salesman from their store called at his home trying to sell some article in the heating line and while there checked the house as to its plumbing, heating, refrigeration, radio, furniture, and in fact everything that they sell, which would indicate that they intend to do some real merchandising in that locality.

I started a similar house-to-house canvass five years ago of our surrounding farming communities and have added to this as we could since, and find that we are still able to dig up prospects through our first canvass made five years ago.

Another friend of mine in Portland who is a traveling salesman for a heating manufacturer inquired of the same mail order house what they could do for him in the spring if he wished a steam or hot water heating plant for a new house. They informed him that they would furnish him with plans, all materials and full instructions so that he could install the material himself, or specifications for hiring a steamfitter, and that they would probably be able to give him the name of a steamfitter to do the work if he wished. If this isn't service, we would like to know what one would wish.

Signed (N————)

Spinach and Buttermilk

To the Editor:

A friend a few days ago stated he had been ordered to spend the rest of his life on spinach and buttermilk.

He did not cuss the physician who so prescribed, and acknowledged, of course, it was all for his own good for his stomach could have no other food.

Too much credit is like too much or too rich food. No one ever failed in business because of too little credit but because of too much credit. His credit diet is just as important to his financial body as food diet is to his physical body.

A delegate to the national hospital convention here stated that when a man is sick he shows his true self. This is no doubt true whether he be physically or financially sick.

A local electrical firm just failed. The president of the company told us that if his creditors had denied him credit two years ago, he would be better off today and probably in business yet—that it was the supply houses who were too anxious to sell him merchandise and carry his account that caused his failure in business.

The true friend of the retail merchant today is the wholesaler's credit man who will prescribe spinach and buttermilk where necessary for a credit diet and not load him up with still more indebtedness to work out from under.

Now is the time, above all, to prescribe shorter terms, stricter credit and a denial of credit and prevent pyramiding of indebtedness.

With volume off, how much worse will it be with final sales—payment, off too?

Minneapolis, Minn. D. R. Thomas, Secretary,
Central Western Credit Assn.

Stop Compromise Settlements

To the Editor:

Nineteen hundred thirty-two in our industry seems to have started with many assignments made by jobbers for the benefit of creditors, and in back of these assignments seems to be one thought, namely, compromise offers of settlement on a basis of anywhere from 10 to 50 per cent, and where creditors have not been over anxious to accept those compromise settlements, voluntary or so-called involuntary petitions in bankruptcy have been filed for the purpose of forcing through these compromise settlements.

Who are the jobbers that have been forced into liquidation? Examination of them would show that the creditors involved in each instance have been friends of those jobbers. Friends who have carried them against their better judgment; carried them in spite of rumors and knowledge that the concern was insolvent or taking business on an unprofitable basis to the detriment of other established jobbers. It is these creditors who have shown a helping hand that are later asked to carry the bag.

$3,000 RING
found in bath tub

THIS departing guest was frantic: A $3,000 diamond ring lost—and he couldn't wait to look for it. With agony in his voice, he called the United Manager. Three hours go by. The guest has gone, but the manager is still on the job.

A wild idea—the Manager pokes a flash-light down the bath tub drain—there's a faint sparkle—plumbers arrive, the drain gives up a $3,000 ring.

Another true story proving that United Managers do the impossible in finding lost articles. This extra service costs the hotel money? Yes, but what of it. Extra service is taken for granted at United Hotels, just like larger rooms per dollar—and handy garage accommodations.

Extra service at these 21
UNITED HOTELS

NEW YORK CITY'S *only United*.....The Roosevelt
PHILADELPHIA, PA.....The Benjamin Franklin
SEATTLE, WASH.....The Olympic
WORCESTER, MASS.....The Bancroft
NEWARK, N. J.....The Robert Treat
PATERSON, N. J.....The Alexander Hamilton
TRENTON, N. J.....The Stacy-Trent
HARRISBURG, PA.....The Penn-Harris
ALBANY, N. Y.....The Ten Eyck
SYRACUSE, N. Y.....The Onondaga
ROCHESTER, N. Y.....The Seneca
NIAGARA FALLS, N. Y.....The Niagara
ERIE, PA.....The Lawrence
AKRON, OHIO.....The Portage
FLINT, MICH.....The Durant
KANSAS CITY, MO.....The President
TUCSON, ARIZ.....El Conquistador
SHREVEPORT, LA.....The Washington-Youree
TORONTO, ONT.....The King Edward
NIAGARA FALLS, ONT.....The Clifton
WINDSOR, ONT.....The Prince Edward

UNITED HOTELS

From a moral and business point of view this is unfair.

To permit an account which made a failure of his business, to put through a compromise settlement and to again extend him credit is foolhardy, for it has not made a better business man out of him. On the contrary, it has shown him how easily he can "get away with it," and in my belief if he is permitted to stay in business he will resume his old tactics of taking business at any price, credit risks anywhere, to the detriment of jobber and manufacturer alike.

The only solution is that the industry must make up its mind that no compromise settlements shall be accepted. It is either to be 100 per cent or get out of business. The ultimate results will be beneficial to all.

We therefore go on record as manufacturers and jobbers not to accept any compromise settlement under any circumstances.

New York City. Frank Bros. Mfg. Co., Inc.,
Louis Frank, President.

End of the Jazz Era

To the Editor:

We have noted with particular interest your recent announcement letter along with the stories in current issues of DOMESTIC ENGINEERING, regarding the sales promotion plan for the American home, which you have devised and are to promote through plumbing channels, as well as give all other phases of the building industry an opportunity to capitalize on it.

There have been straws in the wind for many months indicating the reverse of the pendulum from the Jazz Era. These signs have pointed directly to the return of real interest in the home. Your campaign is, therefore, very timely, as well as sound, and we believe it can not help but bring excellent results, based on intelligent and co-operative effort under the banner, "Spend for the Home in 1932."

(Signed) P. W. Kerr, Vice President,
Henry Weis Mfg. Co., Inc.,
Elkhart, Ind.

Wants Gas Companies to Stop Retail Sales

To the Editor:

The DOMESTIC ENGINEERING plan for gas appliance sales has been carefully read and reread.

The plan is, in my estimation, theoretically ideal, but I do not consider it practical. Over a period of several years, as secretary of the local Master Plumbers Association, committees composed of the groups interested were assembled to take up with the local gas company some plan; these committees were invariably met with courtesy and their propositions offered sincere consideration.

Many plans were outlined by the local gas company, which never succeeded. The attention given these committees and the consideration given their plea was, we think, the result of a faulty franchise that the old gas company had with Kansas City. The very first time that politics so arranged itself that a new franchise could be secured from the city, a new franchise was secured that seemed to correct the old troubles, for im-

mediately all co-operation offered by the gas company was abandoned.

It is my opinion that the individual master plumber, hardware merchant or furnace dealer is not strong enough to enforce and carry out such a plan as you propose when the policies of the gas company are dictated, often, from sources far removed from the little city where the plumber and hardware merchant are operating.

If you will make clause No. 13 of your plan read, "The gas company will not wholesale, retail or install," changing the meaning of the other paragraphs to correlate with that of the new reading of No. 13, I could heartily approve your plan.

I just can not believe a public service corporation which is guaranteed a fair return on the capital vested, has any right whatever to use the monopoly it is given by a city against the small business man who does not have his profit guaranteed.

(Signed) W. C. Green,
Secretary, Southwest Credit Bureau, Kansas City, Mo.

Convention Dates

April 11-16, 1932—A. O. B. A.—The ninth annual convention and show of the American Oil Burner Association, to be held in Mechanics' building, Boston, Mass. Convention headquarters at the Statler hotel.

April 18 and 19, 1932—MISSOURI—The annual convention of the Missouri State Association of Master Plumbers, to be held in Kansas City, at the Muehlebach Hotel.

April 18 and 19, 1932—TEXAS—The annual convention of the Associated Master Plumbers of Texas, to be held in San Antonio, with headquarters at the Blue Bonnet Hotel.

April 18 and 19, 1932—WISCONSIN H. & P. C.—The annual convention of the Heating and Piping Contractors Wisconsin Association, to be held at Wisconsin Rapids.

April 19, 1932—RHODE ISLAND—The annual meeting of the Rhode Island Master Plumbers Association, to be held at Providence, with headquarters at the Dreyfus Hotel.

April 22 and 23, 1932—LOUISIANA-MISSISSIPPI—The annual convention of the Louisiana-Mississippi Association of Plumbing and Heating Dealers, to be held at Mandeville, La., with headquarters at the St. Tammany Hotel.

April 25 and 26, 1932—OKLAHOMA—The annual convention of the Oklahoma Master Plumbers Association, to be held at Enid, with headquarters at the Youngblood Hotel.

April 26, 1932—COLORADO—The annual convention of the Colorado Society of Sanitary and Heating Engineers, to be held at Denver, with headquarters at the Albany Hotel.

May 2 and 3, 1932—FLORIDA—The annual convention of the Florida State Association of Master Plumbers and Heating Dealers, to be held at Tampa.

May 2 and 3, 1932—TENNESSEE—The annual convention of the Associated Master Plumbers of Tennessee, to be held in Memphis, with headquarters at the Peabody Hotel.

May 9, 10 and 11, 1932—KENTUCKY—The annual convention of the Kentucky State Association of Master Plumbers, to be held at Frankfort.

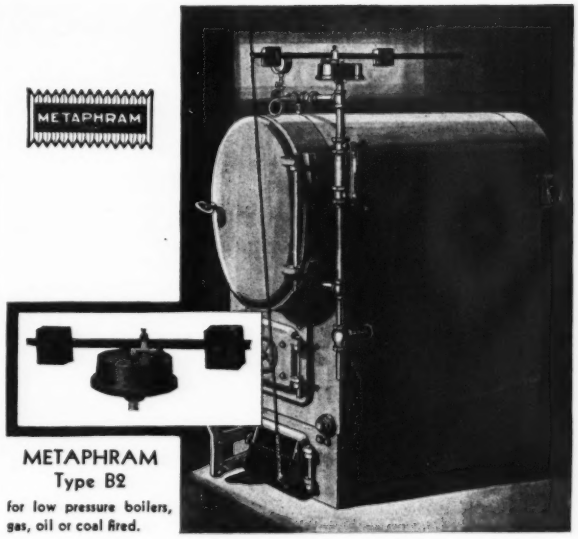
May 9, 10 and 11, 1932—N. P. S. A.—The annual convention of the National Pipe and Supplies Association, to be held at Pittsburgh, Pa., with headquarters at the William Penn Hotel.

May 10 and 11, 1932—CONNECTICUT—The annual convention of the Connecticut Master Plumbers' Association, to be held at New Britain, with headquarters at the Hotel Burritt.

May 13 and 14, 1932—OREGON—The annual convention of the Oregon State Association of Master Plumbers, to be held in The Dalles, Ore.

May 16, 17 and 18, 1932—PENNSYLVANIA—The annual convention of the Pennsylvania State Association of Master Plumbers, to be held in Wilkes-Barre, with headquarters at the Mallow-Sterling Hotel.

May 16, 17 and 18, 1932—H. & P. C. N. A.—The 43rd annual convention of the Heating and Piping Contractors National



METAPHRAM
Type B2
for low pressure boilers, gas, oil or coal fired.

METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil or coal fired.

Descriptive Bulletins on Request

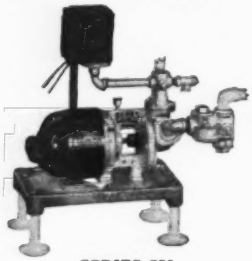
NATIONAL REGULATOR CO.
2317 KNOX AVENUE CHICAGO

PHOENIX BRASS FITTINGS

TESTED!

PHOENIX BRASS FITTINGS CORP.
Irvington, New Jersey

SELF-PRIMING PUMPING UNITS



SERIES 750

Here is the ideal replacement pump on that job where the "other kind" of pump fell down.

Available in three sizes, i. e., 200, 300 and 450 GPH working pressure, 50 lbs. or 115 feet total head.

Handles air same as water, hence has a powerful suction lift guaranteed for 28 feet. Corrosion proof, and will last a lifetime. No other pump like it!

HIGH PRESSURE PUMPS!

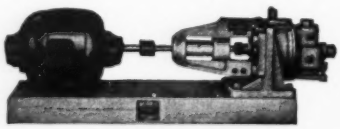
5 pump sizes, all suitable for 100 lbs. working pressure.

Deliveries 70 GPH to 800 GPH against total heads of 230 feet or 100 lbs.

Here is a compact turbine type pump capable of truly amazing performance in either *hot* or *cold* water service.

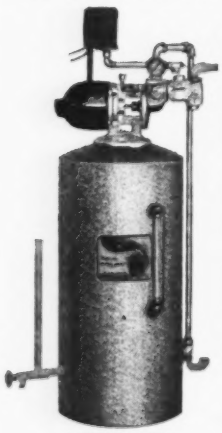
How about that high pressure job?

NO PULLEYS
NO PLUNGERS
NO CYLINDERS
NO BELTS
NO GEARS
NO LEATHERS
NO TROUBLE!



SERIES 1100

COMPLETE WATER SYSTEMS



SERIES 8750
HOME WATER
SYSTEM

Burks Super Turbine Self-Priming Pumps are manufactured under U. S. Patents Nos. 1619286 and 1686549 and are recognized in the trade as the finest and best pumps on the market. They stand supreme in *construction, appearance, performance* and *long life.*

They can be used with storage tanks of any size, and the capacities range from 200 to 1000 GPH at pressures from 0 to 100 lbs. per square inch.

Loops and *air pockets* in the suction line mean nothing at all to the *air-pumping* Burks Super Turbine!

Bronze and *Stainless Steel* insure corrosion-proof pumps. Tanks galvanized inside and outside to prevent rust.

You will never have to apologize for having sold your customer a Burks Pump or Water System.

It costs less to own a Burks!

NEW LOWER PRICES!

Write Today for

CATALOG 31 and SPECIAL BULLETINS

DECATUR PUMP COMPANY DECATUR, ILLINOIS

Association, to be held at Detroit, Mich., with headquarters at the Book-Cadillac Hotel.

May 23 and 24, 1932—GEORGIA—The annual convention of the Georgia State Association of Master Plumbers, to be held at Albany, Ga., with headquarters at the Gordon Hotel.

May 23, 24 and 25, 1932—CALIFORNIA—The 31st annual convention of the State Association of Master Plumbers of California, to be held at the Leamington Hotel, Oakland.

May 24 and 25, 1932—NEW JERSEY—The annual convention of the New Jersey Master Plumbers Association, to be held at Bon Air Lodge, Lake Hopatcong, N. J.

June 2 and 3, 1932—VIRGINIA—The annual convention of the Virginia Associated Plumbing and Heating Contractors, to be held at Alexandria, with headquarters at the George Mason Hotel.

June 14-17, 1932—N. D. H. A.—The annual convention of the National District Heating Association, to be held in Pittsburgh, Pa., with headquarters at the William Penn Hotel.

June 21, 22 and 23, 1932—N. A. M. P.—The 50th annual convention of the National Association of Master Plumbers, to be held in New York City, with headquarters at the Hotel Pennsylvania.

June 26-30, 1932—A. S. H. V. E.—The semi-annual meeting of the American Society of Heating and Ventilating Engineers, to be held in Milwaukee, Wis.

COMING TRADE EVENTS

May 14, 1932—The 50th Anniversary celebration dinner-dance of the Plumbing Contractors' Association of Chicago, to be held at the Congress Hotel.

June 20, 21, 22 and 23, 1932—Exposition of plumbing, heating and allied products, in connection with the 50th annual convention of the National Association of Master Plumbers in Madison Square Garden, New York City.

Death of Edwin H. Rinear

Edwin H. Rinear, plumbing and heating contractor, of 3218 Kensington avenue, Philadelphia, Pa., died on March 6. The funeral was held March 9th from the funeral parlors of Wm. H. Battersby. Mr. Rinear was in his 76th year at the time of his death.

Death of Charles P. Abel

Charles P. Abel, supervisor of plumbing in University City, Mo., died recently at his home. He was in his 63rd year. Mr. Abel was active in the plumbing industry all his life. For many years he was connected with the firm of Abel & Gerhard of St. Louis. At the retirement of this firm in 1915, he engaged in business with his brother, Louis Abel. This firm retired from business in 1920. He was president of the St. Louis Master Plumbers' Association in 1908.

In 1925 Mr. Abel was appointed to the position of supervisor of plumbing, and continued in that capacity until his death. Mr. Abel was widely known among members of the industry in Missouri. His strict enforcement of the plumbing laws in University City gained for him the respect of all with whom he came in contact. Funeral services were conducted under auspices of the Masonic Order, and were attended by a large number of master plumbers.

Death of George B. Fayette

George B. Fayette, plumbing inspector at Oswego, N. Y., died recently at his home in that city. He had been ill since January when he was stricken with a heart attack. Mr. Fayette, who was born in Oswego, was for a number of years in the plumbing and heating business with a brother under the firm name of Fayette Bros. with a store in East Second Street.

ITEMS FOR STORE, SHOP AND JOB

Elsewhere in this issue there is an article telling how a contractor took advantage of the low price sales weapon and sold ten heating jobs in four weeks. It is safe to say that this is only part of the story. The complete sales weapon must have included low costs plus new and improved equipment. In your efforts to increase your business, use the advantages which continually are being placed in your hands through developments in items for your store, shop and job.

An Oil Burner and Boiler Combined to Form One Unit

An announcement has been made of an oil burner and boiler which have been combined to form one unit. The boiler consists of two shells, an inner and outer. It is of steel fire tube construction, A. S. M. E. standards.

The inner compartment, which is called the boiler proper, is 48 in. long and 20½ in. in diameter with 57 1½ in. O. D. fire tubes. The fire tubes surround a central tube which is 12 in. O. D. This tube forms a combustion chamber.

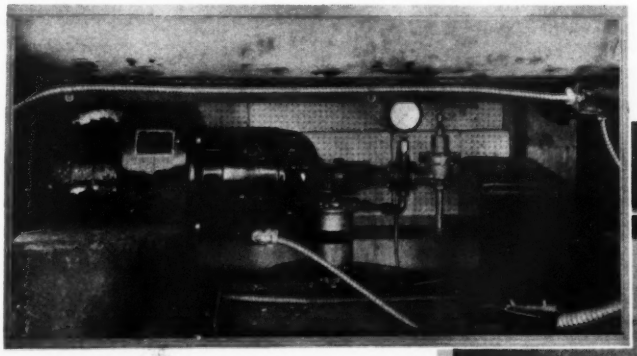
The outer shell surrounding the boiler is 24½ in. O. D. placed eccentric with the boiler so as to form a preheating feed water jacket and steam space. The distance between the outer shell and the boiler at the bottom is ¾ in. This allows a space of 3¼ in. between the boiler and the outer shell at the top.

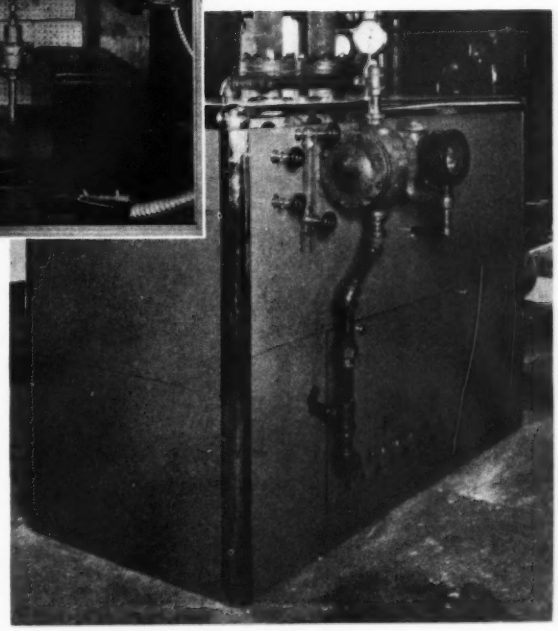
The boiler is rated as having 120 sq. ft. of heating surface. The return lines and boiler feed connection are made at each side of the outer shell at a point near the center line. Water is fed from the outer shell to the boiler through ports located in the bottom of the boiler.

The smoke box in the rear of the boiler is sealed by a cast-iron drum connected at four points to the feed water shell by pipe connections allowing preheated feed water to circulate through this drum. In this drum is located an indirect heater with two outlets at the rear of the boiler for providing domestic hot water.

Induced draft is accomplished by placing a blower in the flue at the rear of the boiler. The blower is operated by a motor placed under the boiler assembly. The motor also operates the fuel pump for delivering oil from a storage tank to the burner nozzle. The use of the induced fan for furnishing air for combustion and pulling the products of combustion through the boiler and discharging them into the stack, is designed to prevent pockets of rich vapors from collecting and to eliminate the possibility of blow-backs.

Products of combustion are then passed to the front

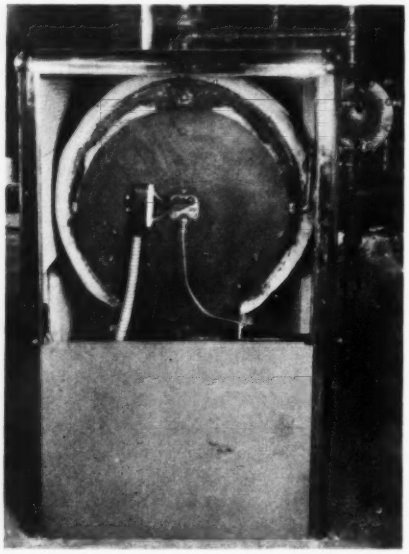




Readers will find in this department news of our industry's progress in the manufacture of equipment. You can read of the efforts of manufacturers to develop products which will increase customer demand, will make shop methods more efficient and will simplify installation.

of the boiler through 37 upper tubes, returning to the rear through 20 lower tubes, then to the fan and then to the stack.

The complete unit is encased in a rectangular casing



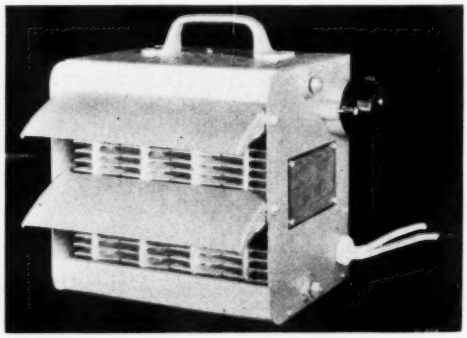
which is insulated on the inside with acoustical material to reduce any mechanical or combustion noises. This case is blue enamel finish with nickel-plated corner rails. Doors are provided in the side which allow for inspection or adjustment of the mechanical parts.

The unit is manufactured in three sizes having capacities of approximately 600 sq. ft., approximately 1500 sq. ft. and approximately 4,000 sq. ft. of equivalent direct steam radiation, respectively.

The unit is sponsored by Richardson & Boynton Co., and Electrol Incorporated, both of New York City.

Unit Heater Which Uses Electricity

The item shown in connection with this description is an electric unit hater which has been placed on the market. It can be used as either stationary or portable



equipment. Also, it may be applied as concealed or recessed radiation and as a blast unit for duct air heating. It is fully electric in operation. The American Foundry Equipment Co. of Mishawaka, Indiana, is the manufacturer.

COPPER *for* SATISFACTION

Leading Manufacturers of AUTOMATIC STORAGE SYSTEMS *use* G&C COPPER TANKS *Exclusively*

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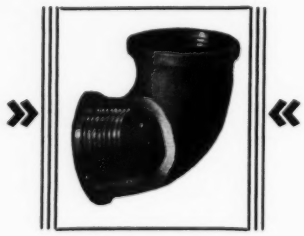
E. N. Ockefair, Inc. New York, N. Y. — Gerstein & Cooper Co. Baltimore, Md. — G. Mason Price Montreal, P. Q.

Troop Water Heater Co., Pittsburgh, Pa.

PIPE FITTINGS



Clean threadways—Tapping to gauge—Absence of sand holes—all go to distinguish—IMICO—Fittings.

A full line in malleable iron, cast iron and brass.

Also manufacturers of brass and iron valves.

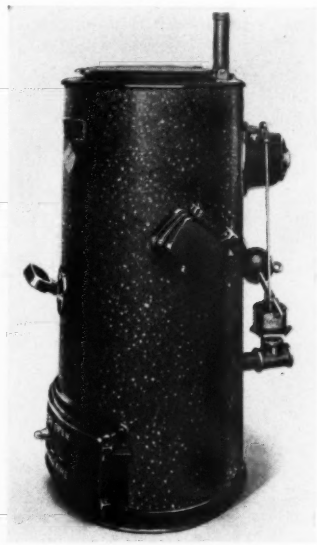
ILLINOIS MALLEABLE IRON CO.

Chicago, Ill.

MANUFACTURERS OF BRASS AND IRON VALVES

A Water Heater Which Burns Coal

A recent announcement is to the effect that an automatic coal burning water heater has just been placed on the market. It has a magazine feed with a storage capacity of 20 lb. of anthracite which is rated to keep the average family supplied with hot water for 24 hours. The heater capacity is listed as 25 gallons of water per hour at a temperature of 150 deg. Fahr. The grate is of the single casting type and is inclined to provide the magazine feed effect. The ashes drop from the grate into a removable ash receiver of 15 lb. capacity. Automatic temperature regulation controls the positions of the check and ash dampers in accordance with the temperature of the water. The heater requires a floor space of 22 in. by 16½ in. when the ash door is closed. It measures 31½ in. from the floor to the top of the feed door. The manufacturer is The Floyd-Wells Company of Royersford, Pennsylvania.



A Humidifying Radiator

A recent announcement tells of a humidifying radiator which has been placed on the market. The unit consists of a combination of an extended surface type radiator with water pans. The steam or hot water headers are vertical and are designed to be common to the radiator section and the tubes which pass through the evaporating pans. Heating tubes are located in the water pans so as to heat the water. This facilitates evaporation. The item is manufactured by the Hart & Hutchinson Company of New Britain, Connecticut.

BLAKE

Carrier Chairs

Blake Carrier Chairs are the exclusive development of Blake engineers and all features are PATENT APPLIED FOR.

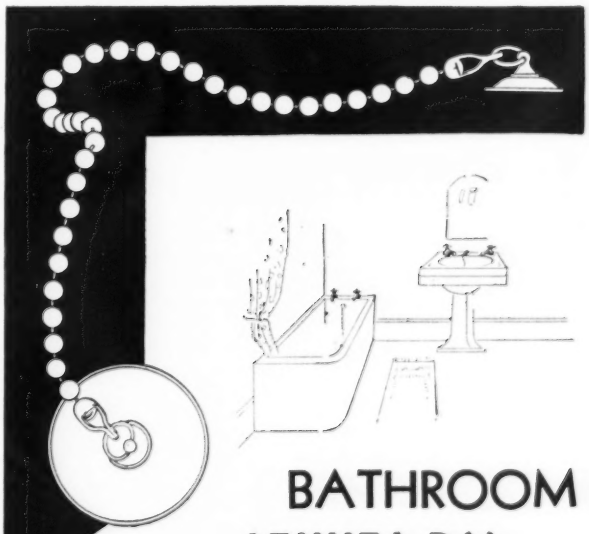
The three illustrated are part of a long line of wall hung closet fittings which are made to fit any manufacturer's bowl (either siphon jet or blowout type).

They are adjustable vertically at the wall—extremely sturdy with heavy studs and nuts—each fitting is supplied with a test cap.

The Blake plant is equipped to design and service any installation, regardless of size.

Be sure—use the "Tested Blake"—send for complete Blake Catalog. Blake Products are sold by jobbers everywhere.

BLAKE SPECIALTY COMPANY
ROCK ISLAND « ILLINOIS

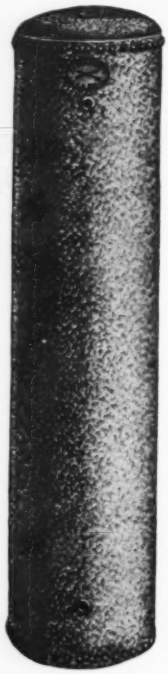


BATHROOM JEWELRY

Nothing so adds to the harmony of a modern bathroom as attention to detail . . . Bead Chain, *bathroom jewelry*, used on fixtures, is the finishing touch—the mark of superior taste . . . Urge your customers to use Bead Chain.

THE BEAD CHAIN MFG. COMPANY
1932 STATE STREET BRIDGEPORT, CONN.

Bead Chain For Beauty



Quality
—Materials
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—the Outstanding features of
KOVEN
***Products since* 1881!**

For more than a half century, QUALITY has . . . and continues to be, the guiding rule in the manufacture of KOVEN products.

Quality materials—quality design—quality workmanship.

If you will have nothing but the best, specify "KOVEN" when ordering through your jobber.

"KOVEN" PLUMBERS' HANDBOOK
Write for free copy of Handbook giving Specifications, sizes, weights, capacities, etc., of every KOVEN product. A valuable reference book.

Other KOVEN Products:

Range Boilers
Storage Tanks
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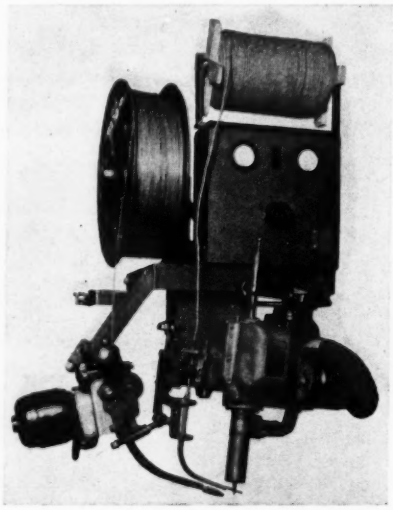
TRADE MARK
L.O.K. BRO. INC.

Expansion Tanks
Pneumatic Tanks
Barber Boilers
Scullery Sinks

L. O. KOVEN & BRO., Inc.
154 Ogden Avenue
JERSEY CITY, N. J.

Wire Feeding Device For Arc Welding

Announcement has been made of an item designed to fill the need for an automatic arc welding device having a high speed of operation on butt, fillet or building-up welding where the deposited metal is required to have



physical characteristics equal to or better than mild steel. The wire feeding part of the device provides continuous filler metal by means of the reel mounted on the head shown in the accompanying illustration. The wire is fed into the arc just in front of the arc travel. Means are provided for varying the rate at which the filler metal is fed into the arc so that the amount of metal deposited can be varied to meet the conditions demanded by the speed of the head and the type of weld being made. Since the rate at which the filler metal can be fed is varied independently of the speed of the head travel, only one size of filler metal is necessary for any type of work within the range of the equipment. The filler metal carries no current and its size is independent of the current used for welding. One size of strip can be used for any current from 75 to 500 amperes. The Lincoln Electric Co. of Cleveland, Ohio, is the manufacturer.

A Metallic Hose for Flexible Connections

An announcement has been made telling of improvements worked into a metallic hose used for flexible connections. It has been designed to withstand high

pressures and for conveying penetrative liquids and gases. It is manufactured by The American Metal Hose Company of Waterbury, Conn.

New Trade Literature

Booklet on Welding

The Bastian-Blessing Co. of Chicago, Ills., has published a 12-page booklet on welding showing how many welding problems have been solved. Several examples are given showing how even apparently intricate jobs of welding are comparatively simple. Questions concerning weight, efficiency and cost are also given due consideration.

Envelope Stuffer on Oil Burning Unit

The Heater Division of the Motor Wheel Corporation of Lansing, Mich., has published an 8-page envelope stuffer describing and illustrating its line of oil burning units. This stuffer is printed in three colors, red, green and black, and it bears the title "Livable Homes Depend Upon the Heating System."

Folder on Humidity Controller

Humidity Control Co. of Tacoma, Wash., has issued a folder illustrating and describing its line of humidity controllers, which are designed to give automatic control for relative humidity. These devices are small instruments that can be mounted on the wall in an inconspicuous place.

Folder on Air Conditioning Units

Dail Steel Products Company of Lansing, Mich., has issued a 4-page folder, 8½ x 11 in. in size, illustrating and describing the construction, installation and operation of its line of air conditioning units. These units are designed for installation and operation in connection with steam, hot water or warm air heating systems. These units can also be used for summer cooling.

Catalog of Precision Pressure Controllers

Mason Regulator Company of Boston, Mass., has issued a 16-page catalog, 8½x11 in., illustrating and describing in detail the construction and operation of its control instruments, including pressure recording and non-recording controllers, temperature recording and non-recording controllers, differential and pressure limit controllers, flow recording and non-recording controllers. This catalog is printed in three colors, black, green and silver.

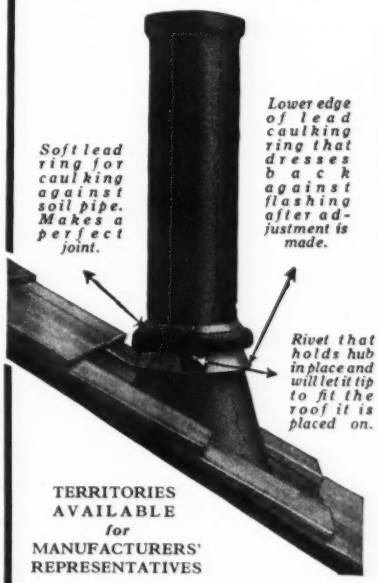
Minneapolis-Honeywell Regulator Co.'s Condensed Catalog

Minneapolis-Honeywell Regulator Co. of Minneapolis, Minn., has issued a condensed complete catalog of its line of automatic controls, consisting of 16 pages with cover, 8¾ x 11 in. in size. This catalog contains illustrations and descriptions of this company's electric clock thermostats, mercury switch thermostats, boiler water temperature controls, warm air limit controls, unit heater controls, combustion safety controls, stackswitches, motor gas valves, damper motors, industrial motor operated valves, refrigeration controls, etc., etc. More than 80 high grade halftone illustrations are shown in this catalog.

Booklet on Air Conditioning

Frigidaire Corporation of Dayton, Ohio, has issued an exceptionally attractive booklet under the title of "Air Conditioning for Personal Comfort and Property Protection," consisting of 48 pages, 11x9 in. This booklet is printed on high grade paper with two colors, black and blue, and with exquisite halftone engravings. "Anticipating Human Needs" is the title of the preface, and the rest of the contents is divided into the following chapters: 1. Air Conditioning for Personal Comfort.—2. Air Conditioning With Room Coolers.—3. Efficiency at Peak Level in Offices.—4. Cool Comfort in Homes.—5. More Comfort for Patrons and Greater Protection to Merchandise in Stores and Shops.—6. Pleasantly Cool and Quiet Sur-

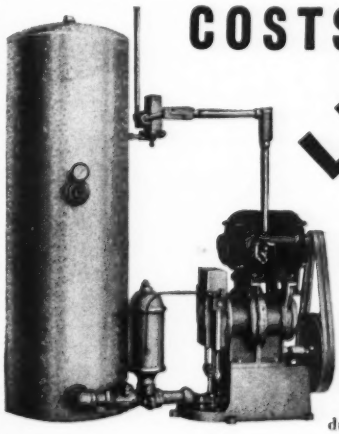
REDLON
ADJUSTABLE ROOF FLANGE


Soft lead ring for caulking against soil pipe. Makes a perfect joint.
Lower edge of lead caulking ring that dresses back against flashing after adjustment is made.
Rivet that holds hub in place and will let it tip to fit the roof it is placed on.

TERRITORIES AVAILABLE *for* MANUFACTURERS' REPRESENTATIVES

NOW is the time to put in a stock of Redlon Adjustable Roof Flanges so that you can fill the emergency orders that always come with Spring rains. No cutting, fitting, caulking or lead pouring with which to bother, yet you always get a perfect fit and tight joint with a Redlon Flange. Made of heavy sheet copper and also of galvanized iron. State size of pipe and whether roof is flat to 25° or 25° to 45°.

O. M. REDLON
Corner Front and Ferry Sts. BATH, MAINE



COSTS LESS TO OPERATE

Because of the new rotary principle employed in its power head, making the head more efficient, a Dorward-Red Jacket Water System costs less to operate and to maintain . . . Its few parts move in complete cycles, reducing friction and producing greater capacity for power used. No walking beams, connecting rods, or other oscillating parts . . . Gears are enclosed and run in oil, with almost no sound and no wear. All parts are needlessly strong—so that replacements are practically unknown . . . Wherever a water system, requiring no attention, is desirable, there is the place for a Dorward - Red Jacket. Larger power heads for heavy duty requirements. Write for Catalog 11, containing complete information.

DORWARD-
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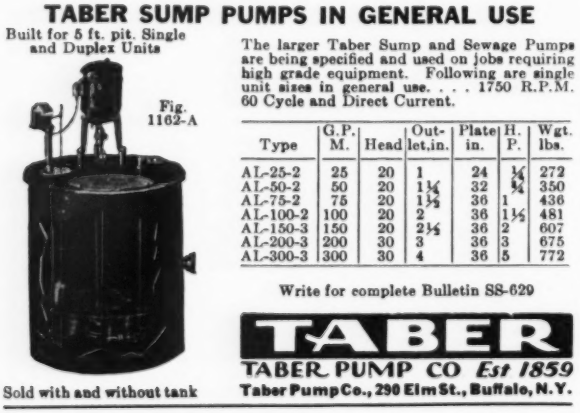
WATER SYSTEMS &
DEEP WELL POWER HEADS

RED JACKET MFG. CO.
DAVENPORT, IOWA
Manufacturers of Pumping Equipment for More than 50 Years.

TAKE THIS SLANT
One complaint breeds another and costs you good business. Sell a high quality line and end that trouble. Try Pennsylvania Range Boilers on your next job.
PENNSYLVANIA
RANGE BOILERS
Complete line of All Welded and Riveted and Welded Galvanized Boilers.
Sold Thru Jobbers
Pennsylvania Range Boiler Co.
24th & Washington Ave. Est. 1895 Phila., Pa.

Stop this!
WOW
Eliminate those unexpected "shots" of hot and cold water in shower baths. Stop the time wasted in trying to get water at the right temperature. Install Powers Mixers. Write for 20-page book.
THE POWERS REGULATOR CO.
2716 Greenview Ave., Chicago
Offices in 37 Cities
With The
POWERS
SHOWER MIXER
HOT
WARM
COLD

Dart Unions
THE "taken-apart" illustration shows you why DART UNIONS will give a pipe-line performance second to none.
See the TWO BRONZE TO BRONZE SEATS . . .
accurately machined and ground to a ball joint.
Pipe ends and nut are made of heavy air refined Malleable Iron.
That's the "why" for their life-long service.
E. M. DART MFG. CO. :-: Providence, R. I.
The Fairbanks Co., Sales Agents
Canadian Factory: Dart Union Co., Limited, Toronto, Canada


TABER SUMP PUMPS IN GENERAL USE
Built for 5 ft. pit. Single and Duplex Units
Fig. 1162-A
The larger Taber Sump and Sewage Pumps are being specified and used on jobs requiring high grade equipment. Following are single unit sizes in general use. . . . 1750 R.P.M. 60 Cycle and Direct Current.
Type | G.P.M. | Head | Outlet,in. | Plate in. | H.P. | Wgt. lbs.
AL-25-2 | 25 | 20 | 1 | 24 | ¼ | 272
AL-50-2 | 50 | 20 | 1¼ | 32 | ¾ | 350
AL-75-2 | 75 | 20 | 1½ | 36 | 1 | 436
AL-100-2 | 100 | 20 | 2 | 36 | 1½ | 481
AL-150-3 | 150 | 20 | 2½ | 36 | 2 | 607
AL-200-3 | 200 | 30 | 3 | 36 | 3 | 675
AL-300-3 | 300 | 30 | 4 | 36 | 5 | 772
Write for complete Bulletin SS-629
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TABER PUMP CO Est 1859
Taber Pump Co., 290 Elm St., Buffalo, N.Y.
Sold with and without tank

roundings for Artists and Visitors in Broadcasting Studios.—7. Heat and Excessive Humidity Successfully Resisted for Candy Manufacturers and Dealers.—8. Rejuvenated Appetites and Increased Profits for Restaurants.—9. How Summer Heat Steals Patrons.—10. Air Conditioning for Property Protection. The text is accompanied by 22 half-tone engravings showing how and where the company's air conditioning equipment has been installed.

Catalog of Fans, Blowers and Ventilators

Ilg Electric Ventilating Co. of Chicago, Ills., has issued a 48 page catalog, 8½x11 in., illustrating and describing its line of self-cooled motor propeller fans, blowers and ventilators. This company's fans and blowers are rated in accordance with the code adopted by the National Association of Fan Manufacturers and the American Society of Heating and Ventilating Engineers. They are designed for installation in offices, stores, restaurants, garages, libraries, industrial plants, auditoriums, theaters, and in kitchens, living rooms, bedrooms and all other rooms in the home. Many tables of dimensions, capacities and specifications as well as export weights and dimensions, when packed, are given.

Arc Welder Folder

Hobart Bros. of Troy, Ohio, have issued a folder consisting of 4 pages, 8½x11 in., illustrating and describing in detail their line of arc welders, including electric arc welding outfits for production, maintenance, salvaging and tool room work, pulley or coupling drive welding units for use where electric operating current is not convenient or available, and self-starting gasoline engine drives in which engine and welder are built together in a compact unit.

Copper Range Boiler Announcement

Hayes Manufacturing Co. of Paterson, N. J., has just issued an envelope stuffer, 6 pages, 3¾x6½ in., illustrating and describing in detail its line of copper range boilers, which are heavily tinned and made in the following sizes: 30, 40, 50, 60, 80 and 100 gallons. These boilers are guaranteed to have been hydraulically tested to the pressure stamped on them, which is either 200, 250 or 300 pounds, and recommended for a working pressure of 42½ per cent of the test pressure, namely 85, 106¼ or 127½ pounds.

Treatise on Water Pipe Sizes

Bridgeport Brass Company of Bridgeport, Conn., has just issued a treatise on water pipe sizes for plumbing fixtures, branches, risers and mains, prepared by the late Walter S. Timmis, at one time president of the American Society of Heating and Ventilating Engineers. This treatise will no doubt prove of great value for reference purposes in the hands of plumbing contractors, engineers, and architects, because it contains many tables and data from which one may readily and easily establish the sizes for the water pipes for practically all classes of buildings. First and foremost it brings a valuable set of rules for determining pipe sizes for groups of fixtures and for risers and mains. This is accompanied by the following tables: 1. Supply sizes for fixtures and maximum flow in gallons per minute.—2. Sizes of water supply branches.—3. Water risers for manufacturing buildings and loft buildings.—4. Pipes sized for giving any desired pressure drop per 100 ft. of run.—5. Water pressure required to deliver water to top of vertical riser with 15 lb. pressure at the top branch.—6. Riser sizes for different pressure drops per 100 ft. run.—7. Pipe sizes for 1, 2 and 3-family houses.—8. Water supply risers for apartment houses.—9. Sizes of water supply mains and meters for apartment houses.—10. Water pressure required to give adequate service at vertical heights given.—11. Weights of brass and copper pipe.

Business Changes

Seattle, Wash.—The Ace Plumbing, headed by Dick Hunton, prominent in local plumbing and heating circles, has opened up a sales room and shop at First avenue and Denny Way.

Des Moines, Ia.—Robinson Brothers Plumbing and Heating Co. has moved from 906 Grand avenue to 516 Twelfth street. The new location gives the firm increased floor and window display space.

Chisholm, Minn.—Alguire & Moeller, plumbing, heating and electrical contractors, have moved their business to new quarters at 226 West Lake street.

Hartford, Conn.—J. L. & M. A. Fierberg, Inc., plumbing engineers and contractors, 1335 Main street, have announced the establishment of a heating and ventilating department, under the management of Lewis S. Maxfield, M. E., formerly with Libby & Blinn, Inc.

Oskaloosa, Ia.—C. W. Droll, salesman for the Drake Hardware Co. for 13 years, has purchased the W. D. Gilchrist Hardware Co. store here and will move the stock to 117 High avenue, where he will also open a plumbing and tinning shop.

Traer, Ia.—G. W. Evans, conducting a plumbing, heating and roofing business, has purchased the hardware and allied lines store of C. L. Crippen and will operate it in conjunction with his present business. The new venture will enable Mr. Evans to conduct a retail unit and give him an opportunity to display lines in his plumbing, heating and roofing units.

El Paso, Tex.—The Service Plumbers, Inc., has purchased the stock and fixtures of the Mattice Plumbing & Heating Co., and will move them to its old location at 1424 Texas street.

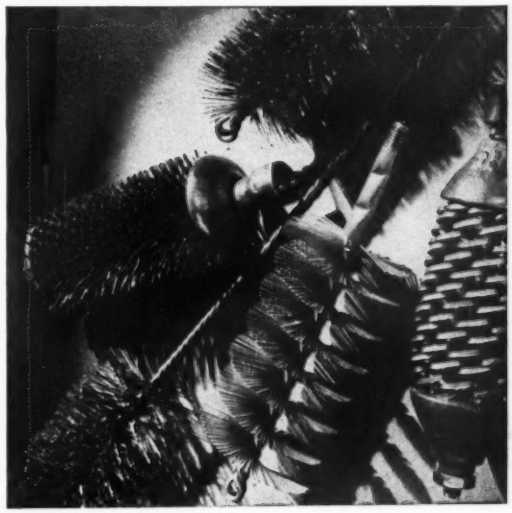
Whitewater, Wis.—The John Levanetz plumbing business here has been purchased by Fred Magill, who is associated with his brother, W. E. Magill, in the plumbing business at Elkhorn, Wis. Perry Magill, formerly of Chicago, Ill., will manage the Whitewater business.

Hampton, Ia.—The Modern Plumbing and Heating Company business, of this city, has passed into the hands of J. C. Keidle, who purchased interests of R. P. Webster in the business. Mr. Keidle plans upon expanding and adding new lines. H. L. Lukensmeyer will become associated with the new owner and will specialize in tin and sheet metal work.

Oklahoma City, Okla.—Roy L. Patton, prominent plumbing and heating contractor of this city, has acquired the long-established contracting firm of B. Y. Hutchinson and has moved the business to 323 N. W. 10th street, where the business will be continued under the firm name of Hutchinson Plumbing & Sales Co.

The B. Y. Hutchinson organization was founded 41 years ago, and the "Big Faucet" which has hung in front of the shop since it was founded has been moved over to the new location. While the newly formed organization, the Hutchinson Plumbing & Sales Co., will specialize in merchandising and modernization work, it is also prepared to handle all other types of work. The new company is also preparing to enter the air conditioning field.

Mr. Patton, who is manager of the new company, was formerly a member of the firm of the Southwest Heating & Plumbing Co. Due to the falling-off in new construction work, this latter firm has discontinued business. He has been engaged in business in Oklahoma City for many years, and is a past secretary of the Oklahoma State Association of Master Plumbers.



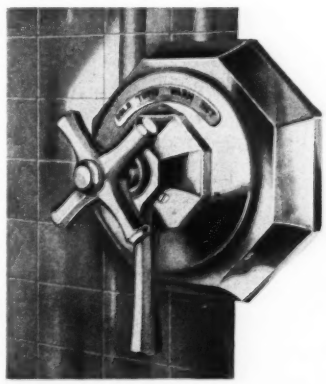
Tempered steel wire brushes . . . . . the quality brushes of the industry. Yet they cost no more.

Every brush made in accordance with tried and true design. Every wire must pass a rigid inspection, and—the wires *cannot* come out.

Complete catalog gladly sent on request

WORCESTER BRUSH and SCRAPER CO.
10 Austin Street :: Worcester, Mass.

The LEONARD *Valve*



MAINTAINS
Constantly
THE REQUIRED
TEMPERATURE

IN addition to being an example of mechanical perfection, the Leonard Water Mixing Valve combines beauty with its performance feature.

You should capitalize on the Leonard reputation, founded after years of extremely satisfactory service in the most trying installations.

Write for complete information

Manufactured by

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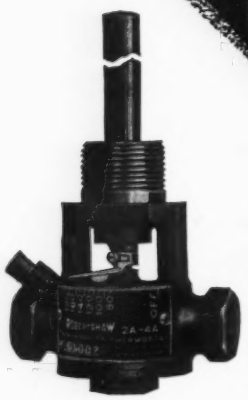
Incorporated 1913

PROVIDENCE RHODE ISLAND

ROBERTSHAW
THERMOSTATS
for
EVERY
USE

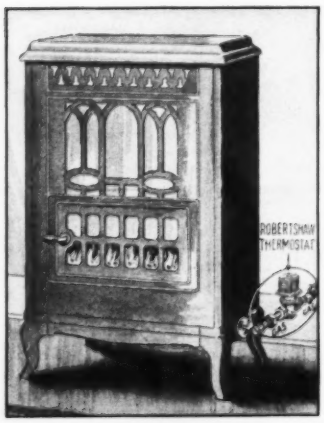


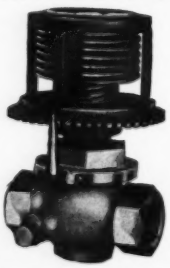
THROTTLING TYPE for Side Arm Water Heaters or Automatic Storage Water Heaters. All sizes from ⅜ to 2 inches. Robertshaw Throttling Type Water Heater Thermostats are fully covered in CIRCULAR FORM R-4.

SPACE
HEATER
THERMOSTAT

Automatic control is just as essential in the space heater as it is in the gas range or gas furnace. The Robertshaw can be used with every gas fired space heater . . . new or old . . . and enables you to add extra profits to every installation.

The No. 2E Robertshaw, developed especially for space heater use, is easy to install, positive and dependable. It is small, compact, and attractively finished. Be sure you have the complete data on this much needed thermostat.





WRITE
for these
circulars . . . no
obligation . . . and have
the last word on thermostats
ROBERTSHAW THERMOSTAT CO.
Youngwood, Penna.

New Contractors and Incorporations

Trenton, Neb.—Victor Jadsen has engaged in the plumbing and heating business.

Detroit, Mich.—The Central Heating Co., 13946 Turner avenue, has been incorporated with a capital of $1,000.

San Francisco, Calif.—James Bean has engaged in the plumbing and heating business at 650 Fell street.

Hewitt, Minn.—Alexander Moodie, long connected with the Hewitt Hardware Co., of this city, has engaged in the plumbing and heating business for himself.

Brooklyn, N. Y.—With a capital of $20,000 the firm of Finkelstein and Perlof, Inc., has been chartered, to establish and operate a plumbing, engineering and contracting business. B. Klein, 1440 Broadway, New York City, represents the new concern.

Hempstead, N. Y.—The firm of Carroll and Engelhard, Inc., has been organized, with a capital of $10,000, to establish a plumbing, engineering and contracting business. H. M. Spitzer, attorney, Woodmere, Long Island, represents the new company.

Brooklyn, N. Y.—A general plumbing, engineering and contracting business will be established by the recently organized firm of Shifrin & Rubin, Inc. The new concern, represented by I. Sondak, 26 Court street, is capitalized at $15,000.

Hartford, Conn.—The Eastern Heating Co. has been chartered with a capital composed of 5,000 shares of no par stock, and will engage in the merchandising and installation of heating equipment. The incorporators are: Max, Rudolph and Jacob Fineberg.

New York City—The Jerome Corp. has been chartered, with a capital of $10,000, to establish and operate a plumbing engineering and contracting business in the Bronx. The new firm is represented by M. M. Benisch, 302 Broadway.

White Plains, N. Y.—The Elite Heating and Appliance Corp. has been chartered, with a capital of $200,000, to establish and operate a heating engineering and contracting business. B. N. Goldstein, local attorney, represents the new concern.

Joseph, Ore.—The Valley Plumbing & Heating Co. has engaged in business, under the management of James M. McNair.

Bowbells, N. D.—F. Rohe and Clarence Kirkelie are engaging in the plumbing business in this city.

New Haven, Conn.—The Mance Heating & Refrigerating Co., Inc., has chartered to conduct a contracting business in the lines mentioned. T. Mance is president, and Harry K. Mance, secretary.

Brooklyn, N. Y.—The firm of George Schrank, Inc., has been chartered, with a capital of 50 shares of no par common stock, to establish and operate a plumbing engineering and contracting business. P. G. Burroughs, 140 Nassau street, New York City, represents the new concern.

New York City—The John Weiss Plumbing Corp. has been organized, with a capital of $100 preferred stock and 100 shares of no par common stock, to establish and operate a general plumbing business. The new concern is represented by A. M. Katz, 570 Seventh avenue.

Summit, N. J.—The firm of Joseph O. Crystal, Inc., has been organized, with a capital of $100,000. It is planned to establish and operate a plumbing engineering and contracting business. Leroy A. Gibby, local attorney, represents the new firm.

WHAT WOMEN ARE DOING

BY DOROTHY EDWARDS

Maine Auxiliary Elects Mrs. N. M. Knudsen as President

The Maine State Ladies Auxiliary held its annual convention in connection with the meeting of the Maine State Master Plumbers Association at the Falmouth hotel, Portland, Maine, on March 15 and 16. Officers for the ensuing year were elected as follows: Mrs. Neil M. Knudsen, Portland, president; Mrs. Herbert Parent, Lewiston, vice president; Mrs. C. Madsen, Woodsford, secretary; and Mrs. F. C. Park, Orono, treasurer.

Mrs. J. Preston Perham, of West Roxbury, Mass., president of the National Auxiliary, described at length the activities of the National organization. Mrs. Perham cited specific examples of the benefits of close co-operation with the master plumbers' associations. She showed how the Auxiliary members can help the plumbing and heating business through their contacts with women's clubs and other social organizations with which they are affiliated. Mrs. Perham was guest of honor at a luncheon at the Congress Square hotel on March 16.

It was voted to send Mrs. C. Madsen of Woodsford as Maine delegate to the forthcoming National convention and Mrs. Iver Iverson was selected as alternate.

The board of directors consists of Mrs. Iver Iverson, Mrs. M. Ryan, Mrs. Leon Blaisdell, Mrs. Howard Gordon, Mrs. Ernest Cunningham.

Mrs. George Scribner, Mrs. Maude Ryan and Mrs. L. G. Hatch composed the nominating committee while Mrs. Iver Iverson, Mrs. G. Dewyca and Mrs. E. Cunningham comprised the auditing committee.

North Shore Women Hold Meeting

The Women's Auxiliary to the North Shore Plumbing Contractors' Association of Chicago met at the home of Mrs. J. M. Krecji on March 17. A delicious dessert and coffee were served on a table decorated with St. Patrick novelties. The afternoon was spent in a social way.

South Side Auxiliary Holds Successful Meeting

The South Side Women's Auxiliary of Chicago held its March meeting at the East End Park cafe. A delightful luncheon was enjoyed, following which the regular order of business took place. Mrs. Larson, the new president, appointed the chairmen of the various committees as follows: Mrs. George Hazard, entertainment committee; Mrs. William Ritter, membership and attendance committee; Mrs. John Delehant, sick committee and Mrs. C. A. Bolton, press committee. The afternoon was spent at cards with bridge honors going to Mesdames Reger, Khym and Wilson and the five-hundred honors to Mrs. Hazard. The hostesses for this meeting were Mesdames Walter Compton, J. Kaleher, William Ritter and Walter Shaw.

Entertain Germantown, Pa., Auxiliary

The Ladies Auxiliary of the Germantown, Pa., Master Plumbers Association held its March meeting at the Waterview Recreation Center. Cocoa and cake were served by the hostesses, Mrs. Rich, Mrs. Rooney and Mrs. Lee.

Indianapolis Auxiliary Has Active Program

The Indianapolis, Ind., Women's Auxiliary held its March meeting at the home of Mrs. L. E. Isley. It was decided that the April meeting be in the form of a luncheon, and Mrs. Bardy and Mrs. Bauer were appointed to secure a suitable place. An evening party was also planned, to be held at the home of Mrs. Herbert Bauer. After adjournment of business, a party was given for Mrs. Charles Trosky.

Entertain Utah Auxiliary

The Ladies Auxiliary to the Plumbing and Heating Engineers of Ogden, Utah, together with their husbands, were guests recently at the home of Mr. and Mrs. C. W.

This group of women was responsible for the recent organization of locals of the Women's Auxiliary of the National Association of Master Plumbers in Greater New York City. Left to right, standing: Mrs. J. D. Cooley, Manhattan; Mrs. J. Preston Perham, West Roxbury, Mass., national president; Mrs. R. A. Higgins, Manhattan; Mrs. J. O. Stapf, Albany, state president, New York; Mrs. T. P. McLoughlin, Manhattan; Mrs. John A. Sharp, Manhattan; Marcelle Egan, Bronx; Mrs. E. Sieckman, Richmond; Mrs. Alice Roth, Bronx. Seated: Mrs. Charles Zimmermann, Union City, N. J., national director; Mrs. William Metcalf, Rockville Center, Long Island, national director; Mrs. M. J. Kennedy, Brooklyn; Mrs. J. L. Bosch, Brooklyn; Mrs. E. Charette, Richmond; Mrs. Jacob Stockinger, Queens, president; Mrs. Lawrence Redmond, Queens, secretary

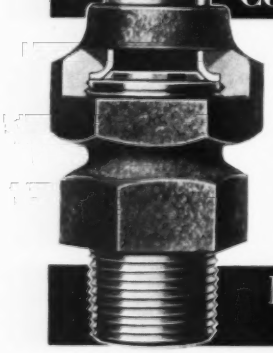
PERFECT-FITTING LEAK-PROOF

1—Easily adjusted to any pitch.
2—Stays tight.
3—Furnished in copper or galvanized.
4—As recently announced a new 15% reduction in prices.

H. E. HESSLER CO.
Syracuse, N. Y.

HESSLER'S ADJUSTABLE ROOF FLANGE

Hays Double Seal Copper Connections



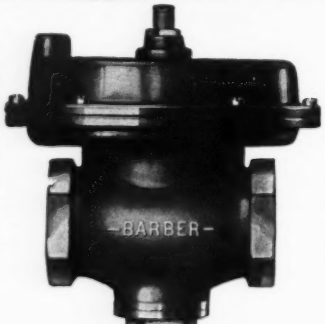
Copper pipe in a Hays Double Seal Connection first makes up on the 45-degree seat. After tightening with a wrench this 45-degree seat holds the pipe in a wedge, making an absolute tight seal.

The 90-degree seat and the flange on the Copper pipe make up the second seal. This second seal protects the first by absorbing all strain and vibration. It locks the pipe and insures a joint of double tightness.

HAYS MFG. CO.
ERIE, PA.

SAVE *on gas bills!*

That's what everyone of your customers is trying to do—get gas bills down as low as possible. With a BARBER Gas Pressure Regulator on any gas appliance, gas bills will be much lower. Show one to your customers, take the orders and the profit. Write for details.



Made in ¼", ⅜", ½", ¾", 1", 1¼", 1½ and 2" sizes

The Barber Gas Burner Co.
3702-4 Superior Avenue
CLEVELAND . . . OHIO

NEW LOW PRICES
SPENCER
MAGAZINE FEED BOILERS

The cost of a Spencer Magazine Feed Boiler and one year's supply of Buckwheat Anthracite is now the same as the cost of an ordinary flat-grate boiler and one year's supply of large size Anthracite. The many exclusive Spencer advantages cost your customers nothing extra, but you make more money.

Write us for full details of the Spencer plan and how it will build profitable sales for you

SPENCER HEATER COMPANY, WILLIAMSPORT, PA.
Spencer Heater Co. of Canada, Ltd., Toronto, Ontario

Bishop. It was a St. Patrick's party and bunco and games were played. Mrs. Guy Leigh, Mrs. Eggleston and Mrs. Bachman were in charge of the entertainment committee. Mrs. Bishop had her table most beautifully set in green gold and white, as were the general decorations. The center piece was a lovely green basket filled with pink and white rose buds, and the favors were tiny green carts drawn by golden burros.

On March 3 the semi-monthly meeting took place at the home of Mrs. John H. Blaes with a 100 per cent attendance. After the regular business routine, bunco was enjoyed. Light refreshments were served by Mrs. Blaes and her daughter.

Chicago Group Holds Party

The members of the Chicago Master Steamfitters Auxiliary recently enjoyed a "costume party" in place of their regular monthly meeting. A five-piece orchestra, arrayed in red and green overalls and all playing harmonious kazoos, added much to the enjoyment. Vocal selections were also offered.

Celebrate St. Patrick's Day

The March meeting of the Rock Island & Moline, Ill., Women's Auxiliary was held at the home of Mrs. Peter H. Kale, and all members were present. Following the business meeting, refreshments were served. The decorations were suggestive of St. Patrick's day. Mrs. Melvin L. McKay entertained the auxiliary on April 11.

Schenectady Auxiliary Celebrates Anniversary

The Schenectady, N. Y., Women's Auxiliary entertained the master plumbers recently with a dinner party, celebrating the auxiliary's third anniversary. The tables were attractively decorated in red, white and blue, and there was a good attendance.

The auxiliary did some charity work recently by helping to clothe the youngsters of a needy family. The members also supply them with a quart of milk a day for an indefinite time. Mrs. C. Rooney entertained the auxiliary on March 10.

Awarded First Prize in Parade

Mr. and Mrs. Foster R. Fanning of Winter Park, Fla., were recently awarded first prize for the best decorated automobile in the Founders' day parade held in celebration of the 50th anniversary of the city. Both Mr. and Mrs. Fanning are well known in plumbing and heating

Above is a picture of the "float" entered by Mr. and Mrs. Foster R. Fanning of Winter Park, Fla., in the Founders' day parade of that city. Mrs. Fanning is at the wheel of the car

circles. Mr. Fanning has been a leader for many years in both his local and state master plumbers' associations, and Mrs. Fanning is past recording secretary of the Womens Auxiliary to the National Association of Master Plumbers. The "float," which was driven by Mrs. Fanning in the parade, is shown in the accompanying photograph.

Tampa, Fla., Auxiliary Holds Meeting

The Tampa, Fla., Women's Auxiliary held a meeting recently at the master plumbers' club house, with Mrs. Frank Williams, presiding. A letter was read from the National Council of Women of the United States asking the assistance of the Tampa women in the move that is under way to make possible an International Council of Women at the Exposition of Progress in Chicago in 1933. Bulletin No. 2 from Mrs. J. Preston Perham, national president, was read. The corresponding secretary of the Tampa auxiliary was requested to send a letter of congratulations to Mrs. Perham for her splendid work. The Tampa auxiliary meets the first Monday of the month.

It's a Great Life If Your Endurance Is Good!

Another complete short story, from the interesting biography of the wife of one of the men in the trade who, as you will find, is doing much to promote her husband's business. This interesting story tells how the clever business woman helps in her husband's office.

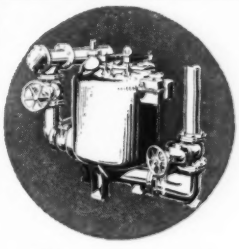
THE next thing to worry about was that the model and the color o his heater were changed, and we had dozens of the old style on hand when everybody wanted the new ones. Time after time I talked myself blue in the face in an effort to convince a purchaser that the old color would harmonize with her furnishings much better than the new one. It was necessary to cut the price and to offer all kinds of inducements to sell them.

Try as we might, we could not unload our supply, and in spite of all we could do, we only got rid of the last one last winter, five years after the original purchase. I considered myself a great deal to blame by reason of the fact that I had been so unduly optimistic as to the sales possibilities and had urged the stock purchase. It would seem that the "white elephant" which I told about buying in a previous chapter did not completely teach me my lesson, but what it failed to teach me, this second lesson did, and I have since been as wary as a church mouse about buying ahead. It was a case of live and learn but a costly experience.

Speaking of color in regard to the heaters reminds me of a bit of advertising psychology that occurred to me in the early days, that we adopted and have carried through with us and are still using. It had to do with the color of specification covers. We began to use RED covers for all specifications that went out from our office. This cover was really RED, no doubt about it even to the colorblind, and was neatly printed with our name and address.

It soon became an identifying trademark, and on a desk, perhaps among other specifications, it is always very obviously ours that stands out from the rest. We have often seen it consulted by a prospect, who may be swamped with other similar propositions, because it is so easily identified.

It has also rebounded to my advantage in the showroom. A man may come in with a familiar red folder in his hand or the edge of it peeping out of his pocket, and the message immediately flashes to my mind, "This is no ordinary visitor but someone to whom we have submitted specifications and therefore worthy of our special consideration." (To be continued.)



Jennings Pumps

JENNINGS PNEUMATIC SEWAGE EJECTOR for lifting unscreened sewage from deep basements. Capacities up to 1500 g. p. m. Heads up to 50 ft. Write for Bulletins 103 and 108. The Nash Engineering Co., 41 Wilson Road, South Norwalk, Conn.

INCREASE YOUR PROFITS

There's a good margin for you
And satisfied customers too!

Sell Dole Air & Vacuum Valves

Write for full information.

THE DOLE VALVE COMPANY 1913 Carroll Ave., Chicago

How it looks inside Dole 2-B Vacuum Valves

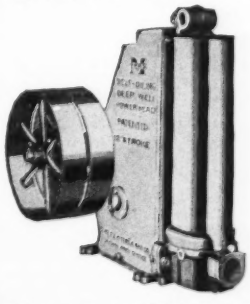
Sell Customer Satisfaction ...and profit is assured

You can safely recommend an OHIO... There's a model to fit every job.
Write for dealer proposition.

OHIO *Automatic* WATER HEATER

Manufactured by THE OHIO HEATER CO., *Columbus, Ohio*

MYERS SELF-OILING POWER PUMPS



Reach out for new pump and water system business with the Myers line of Power Pumps and Water Systems. 200 to 10,000 gallons of water per hour. Unquestionably, this wide capacity range is a sound business asset for those who are serving their trade with power water facilities to meet individual customer needs. Write or wire.

THE F. E. MYERS & BRO. CO., ASHLAND, OHIO
Pumps—Water Systems—Hay Tools—Door Hangers

DAHLQUIST

COPPER BOILERS

For All Purposes

Super-Aquatherm Gas Underfire

Heavy pressure, street pressure, tank pressure —pressure barber boilers and a complete line of Automatic Hot Water Storage System Units.

FINEST COPPER BOILERS MADE

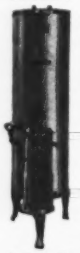
Dahlquist Copper Boilers are now operating on most of the large installations in the country—names on request.

THERE IS A REASON

Dahlquist knows how to make copper boilers that meet your specifications and gives a long-term guarantee on all boilers turned out.

Dahlquist patented Super-Aquatherm which reduces the cost of fuel and Dahlquist Turbo- which stops mud from accumulating in the boiler revolutionizes the home hot water service.

Only Dahlquist boilers have these exclusive features.



Automatic Gas Unit With Side Arm

Architects and heating engineers may rely entirely on Dahlquist workmanship and experience, whether for range boilers, automatic storage boilers or heavy pressure boilers.

Write for Prices and Data.

Dahlquist Mfg. Company

60 West 3rd Street So. Boston, Mass.

Works on 3" or 2" branch lines delivering 12 Gals. per Minute to Valve

Big supply lines and 1" or 1¼" branches delivering 30 to 40 Gals. NOT required

Large Mains, Risers and Supply Pipes No Longer Required

For Flush Valve Closets

Works on 12 Gallons per Minute
Works on ½" or ¾" Branches
Uses Only 2½ Gallons of Water
World's First Really Clean Bowl
Practically Silent in Action

The new siphon-jet flush-valve closet that the whole plumbing and building world is talking about for the

PRIVATE HOME

as well as hotels, clubs, apartments, office and public buildings

Write today for facts and prices.

THE MURDOCK MFG. & SUPPLY CO.
CINCINNATI, O.
1853-1932
Cable Address:
MUR-MADE, Cincinnati, O.

Patented and Patents Pending

The "Murdock" Alternater Closet

Pipe —— Lines Connected by LYT

Congress has proposed that the army and navy be consolidated. They must want to beat Notre Dame every year.

THIS IS ENCOURAGING

Science announces that it is now possible to imitate practically any sound on the radio. Who can tell, some day we may even hope to hear music.

HIGHER FINANCE

Hubby: "I can't raise $100—that's all there is to it. I received a notice this morning from my bank about being overdrawn."

Wifey: "Well, can't you try some other bank? They can't all be overdrawn."

An old Dutchman, returning to Holland, was asked by a friend what, in his estimation, was the strangest thing he had noticed in the United States. He replied: "The United States has many wonderful things but the strangest is a drink called a cocktail, and here is how they make it: they put in whiskey to make it strong; then water to make it weak; gin to make it hot and ice to make it cold; lemon to make it sour and sugar to make it sweet. Then they say, 'Here's to you!' and drink it themselves." —Leighton's Gloom Chaser.

A SILLY QUESTION

"Is your baby a boy or a girl?"
"Of course, what else could it be?"

NEXT BEST THING

"Oh, John!" screamed the excited woman driver, "the car is running away!"

"Can you stop it?" asked the worried husband.

"No."

"Well, then, see if you can't hit something cheap."

Drake: "Since I've been doing my daily dozen my chest has expanded a half inch a week."

Blake: "Well, don't go too far—your house hasn't very big doors now."

TOO CONFINING

He: "Joe's given up the idea of being a surgeon."

She: "Why is that?"

He: "The dear boy discovered that it involved too much inside work."

He (reaching for his hip flask): "I propose a little toast."

Hardboiled Hannah: "Nuthing doing, kid, I want a regular meal."

MEAN ACROBATICS

Percy—"What do you think of Brown?"
Patrick—"He is one of those people that pat you on the back before your face and hit you in the eye behind your back."

Van Horace, A.B., Illinois, '22, was Hardshell's private secretary. One day, after his customary 14 hours' work, he approached his employer:

"I want a day off next week. I haven't had one since I started working for you five years ago. I want to get my tonsils out in the morning and get married in the afternoon."

"Humphf. Just like you college men. Always looking for an excuse to loaf."

Customer: "I want a dog with a head like a Collie, body like an Airedale, and tail like a Boston Terrier. Have you such a one?"

Pet Shopkeeper: "No, sir. Mister, I drowns all that kind."

A dispatch from Paris says that many Europeans are still in favor of paying the war debts. And we thought April Fool's was over. —LYT.

Little Sentences That Sell

Write one of these BLACKBOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.

Bad is only good when worse happens.

* * *

The wisdom of a fool is always conspicuous by its absence.

* * *

Take things always by the smooth handle.

* * *

Silence is the wisest argument of the ignorant man.

* * *

One can bear grief, but it takes two to be glad.

* * *

An industrious man and a cabbage manage to get a-head.

* * *

The world is round, therefore it is endless.

* * *

The speaker of the house is usually a man's wife.

* * *

The music-loving sailor's favorite tune is Nep-tune.

* * *

If a schoolboy doesn't take pains his teacher is apt to supply them.

* * *

Let him who would move the world get a move on himself.

* * *

The street piano supplies airs by handle.

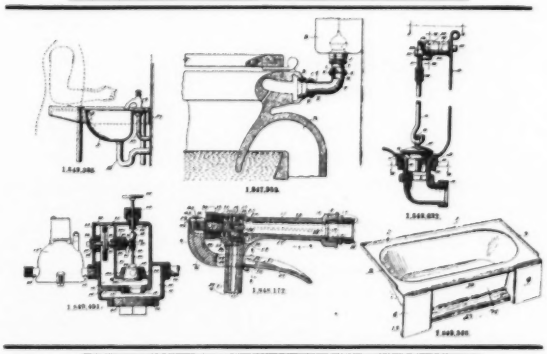
PATENTS

Plumbing Department

1,848,385. Washbasin. Ferdenand G. Schindoski, Chicago, Ill., assignor of one-fourth to James E. Molloy, Norwood, Ohio.

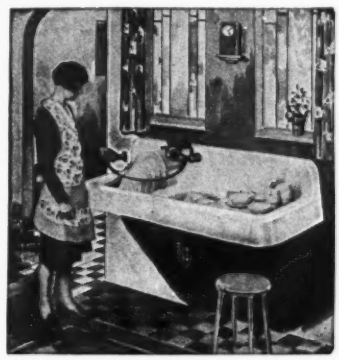
1,847,952. Flush-Ell. Maurice Fetterman, Jamaica, N. Y.

1,848,632. Sanitary Lift Valve. Aage Jensen, Los Angeles, Calif.



1,849,491. Cut-off Valve for Water Supply Systems. Robert S. Kelley, Brooklyn, N. Y., assignor to National Meter Company, New York, N. Y., a Corporation of New York.

1,848,172. Faucet. Leo J. Hengesbach, Cleveland



"EBCO" Dishwashing SINK

with built-in dishpan

Let us tell you how to turn idle hours into extra profits. Send for copy of "A New Selling Slant". It does not obligate you in any way.

The D. A. EBINGER SANITARY MANUFACTURING CO.
411 West Town Street
Columbus, Ohio

INSTALL THIS *PERFECT* BOILER

Before Leaving the Factory these Boilers are Hydraulically Tested « « « « « «

Each Improved "Wilhelmi" Boiler is tested hydraulically to 200, 250 or 300 pounds and recommended to a working pressure of 42½% of the test pressure.

Long life is assured by this test.

Every "Wilhelmi" you install will be an installation that will start to function perfectly and will continue in this same manner constantly.

HAYES MFG. CO., *Makers* PATERSON, N. J.

IMPROVED "WILHELMI" BOILERS

IT'S THE WORK ... *NOT* THE SALES TALK

U. S. HAME COMPANY
BUFFALO, N. Y.

Try the new and improved USHCO Lawson Wrench! It out-performs any other wrench on the market. Its patented principle and the angle handle make it definitely a better wrench.

Our folder gives the details and specifications on these wrenches. It is Free. Write for it now.

for lead work → YAGER'S SOLDERING SALTS

See list of distributors in McRae's 1932 Blue Book

Do a clean job—do it in a hurry—do it without any extra effort—and do it profitably—meaning, do it with YAGER'S.

We will mail you a can free, at your request, and you can make your own test.

See our catalog in Domestic Engineering Plumbing and Heating Catalog.

ALEX R. BENSON CO., Inc.
Hudson, N. Y.
Sales Agency for Canada:
CANADIAN GENERAL ELECTRIC CO.
Toronto and Montreal

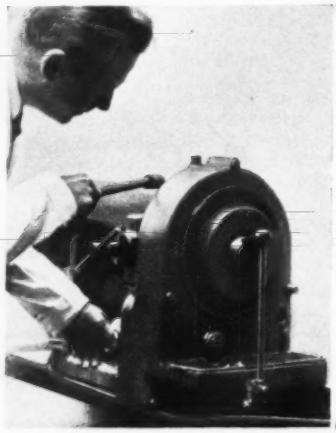
Use these
DEPENDABLE
Fittings

Hundreds of contractors the country over have come to the realization that it is good business to standardize on Acheson

Brass Fittings. They have proved themselves in installations everywhere as fittings that go on quickly and never are a cause of complaint. See Acheson Brass Fittings in Domestic Engineering Plumbing and Heating Catalog.

ACHESON MFG. CO., Rankin, Pa.

ACHESON
Brass Fittings



AXELSON PORTABLE THREADER

Low price; light but rugged; easy to install; quick in operation; cuts threads ½" and up; ½ h.p. G.E. Motor.

Write for Details

AXELSON MANUFACTURING CO.
P. O. Box 710, Vernon Sta.
Los Angeles, Calif.

JONES HOLLOW WARE CO.
Established 1888
BALTIMORE » » MARYLAND

Manufacturers of
Enameled Iron Water Closets, Hoppers, Traps, Tanks and Plumbers' Specialties

WRITE TODAY FOR PRICES

• WARNOCK •
Triple Wear Wrenches

The Warnock wrench is easyto adjust. The strap is arranged in such a way that it can be drawn absolutely tight in *one* movement. Notice, too, that this strap is triple folded at the point of greatest strain.

For chrome, brass and nickle plated pipe

WARNOCK MFG. CO., Worcester, Mass.

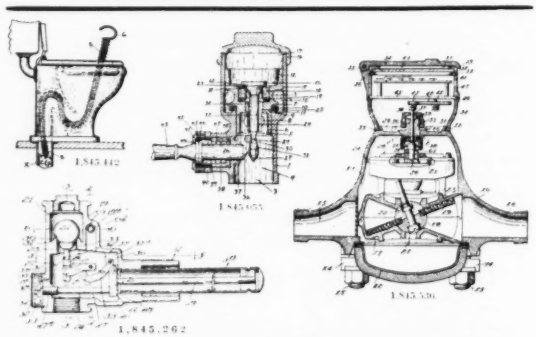
Heights, Ohio, assignor to The Cleveland Brass Manufacturing Company, Cleveland, Ohio, a corporation of Ohio.

1,849,346. Bathtub. John C. Cromwell, Alliance, Ohio, assignor to The Steel Sanitary Company, Alliance, Ohio, a Corporation of Ohio.

1,845,442. Pipe Cleaning Tool. Louis E. Robinson, Council Bluffs, Iowa.

1,845,055. Flush Valve. Fred P. Miller, San Francisco, Calif.

1,845,262. Thermostatically Controlled Mechanism. Howard E. Ginther, La Porte, Ind., assignor to Bastian-Morley Company, La Porte, Ind., a corporation of Indiana.

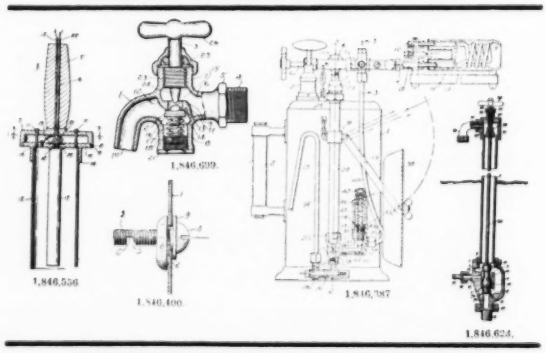


1,845,536. Water Meter. Harry G. Weymouth, Pittsburgh, Pa., assignor to Pittsburgh Equitable Meter Company, Pittsburgh, Pa., a corporation of Pennsylvania.

1,846,556. Water Softener. Fred R. Hubbell, Dayton, Ohio, assignor to Joseph W. Sharts, Dayton, Ohio.

1,846,699. Relief Faucet. Carl F. Uhden, Henry E. Schultheis, and Lorne M. Barringer, Seattle, Wash.; said Carl F. Uhden and said Henry E. Schultheis assignors to said Barringer.

1,846,400. Range Boiler Repair Plug. Claude T. Macfarlane, Seattle, Wash.

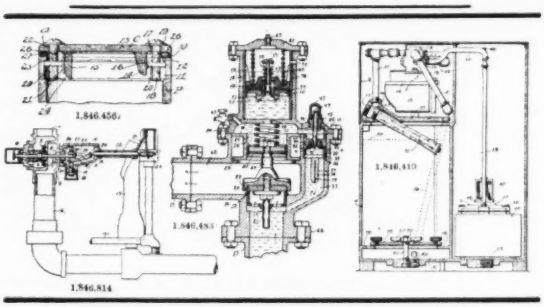


1,846,387. Blow Torch. Christian G. Filzer, Erie, Pa.

1,846,623. Sanitary Frostproof Hydrant. Peter Volk and Anthony J. Wuebben, Dayton, Ohio, assignors to Philip Haas Company, Inc., Dayton, Ohio, a Corporation of Ohio.

1,846,456. Pipe Fitting. Oscar W. Robertson and William P. Chalmers, Gadsden, Ala., assignors to Stringer Brothers Company, Inc., Chicago, Ill., a Corporation of Illinois.

1,846,814. Valve. Edwin Ruud, Pittsburgh, Pa.



1,846,483. Water Hammer and Relief Valve. William L. Gilbert, Richmond, Va., assignor to The American Valve and Meter Company, Cincinnati, Ohio, a Corporation of Ohio.

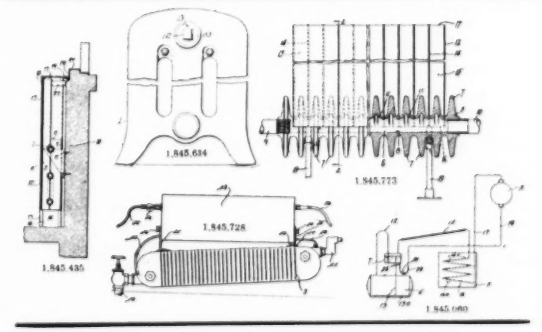
1,846,419. Automatic Water Softener. Stanley G. Harwood and Donald Griswold, Rockford, Ill., assignors to Ward-Love Pump Corporation, Rockford, Ill., a Corporation of Illinois.

1,849,985. Water Softening Gels. Otto Liebknecht, Neubabelsberg, Germany, assignor to The Permutit Company, New York, N. Y., a Corporation of Delaware. In manufacturing a water softening zeolite from a gelling mixture of an alkali silicate solution and a solution of an aluminum or an iron compound, a process which comprises displacing residual reagent liquid in the wet gel with a salt solution, drying the salt impregnated gel and granulating the dried gel by treatment with water.

Heating Department

1,845,435. Radiator. Thomas E. Murray, Jr., Brooklyn, N. Y., assignor, by mesne assignments, to American Radiator & Standard Sanitary Corporation, a corporation of Delaware.

1,845,634. Radiator and Air Valve Therefor. Leslie M. Stadelhofer, Newark, N. J.



1,845,773. Heat Radiating Device. Horace E. Whitten, Somerville, Mass.

1,845,728. Humidifier. Herbert J. Somers, Detroit, Mich.

1,845,060. Refrigerating System. Albert C. Schickler, Cleveland, Ohio, assignor to Edmund E. Allyne, Cleveland, Ohio.

1,843,451. Gas Burner. Hubert R. Humphrey, and George A. Humphrey, Kalamazoo, Mich., assignors to General Gas Light Company, Kalamazoo, Mich.

1,843,548. Ventilating and Muffling Apparatus for Engine Rooms. Frederick K. Fildes, Altoona, Pa.

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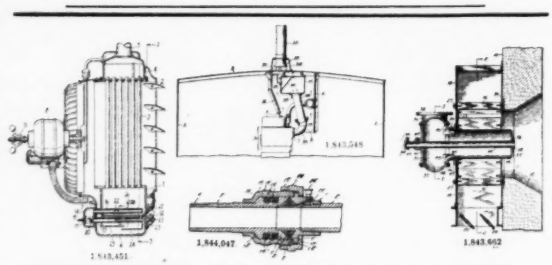

1,844,047. Pipe Joint. Walter R. Smittle, St. Louis, Mo.

1,843,662. Fuel Burner. Ollison Craig and L. V. Andrews, Worcester, Mass., assignors to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts.

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Statement of Ownership and Management of "Domestic Engineering" for April 1, 1932

The following is a statement of ownership, management, etc., as required by the Act of Congress of August 24, 1912, of "Domestic Engineering," published bi-weekly at Chicago, Illinois, for April 1, 1932.

State of Illinois, County of Cook, ss.: Before me, a Notary Public in and for the state and county aforesaid, personally appeared D. J. Hansen, who, having been duly sworn according to law, deposes and says that he is the manager of "Domestic Engineering," and that the following is, to the best of his knowledge and belief, a true statement of the ownership and management of the aforesaid publication, for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:
Publisher, Engineering Publications, Inc., Chicago, Illinois.
Editor, F. P. Keeney, Chicago, Illinois.
Managing Editor, R. V. Sawhill, Chicago, Illinois.
Business Manager, D. J. Hansen, Chicago, Illinois.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)
Engineering Publications, Inc., 1900 Prairie Avenue, Chicago, Illinois. Stockholders: F. P. Keeney, Chicago; O. T. Carson, Chicago; E. D. Winslow, New York City, N. Y.; R. Herlov, Chicago; C. L. Davis, Chicago; E. G. Hutchison, Chicago; R. Payne Wettstein, Pittsburgh, Pa.; W. J. Osborn, Fairfield, Conn.; D. M. Kenney, Chicago; D. J. Hansen, Chicago.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stocks, bonds, or other securities than as so stated by him.

D. J. HANSEN,
Business Manager.

Sworn to and subscribed before me this 25th day of March, 1932.

L. M. DIXON.
[My commission expires September 14, 1934.] Notary Public.
(SEAL)

8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00 for each insertion.

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One inch $4.00. Cash must accompany order. Copy should reach us eight days in advance of publication date.

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BRASS GOODS MAN — SUCCESSFUL midwestern manufacturer considering employment of experienced man to assist in further development and selling Plumbers and Steamfitters Brass Goods and kindred articles. Should have inside and sales experience with manufacturers. Reply confidentially giving very complete information. Address Key 733, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

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SALESMEN—MANUFACTURER WITH Complete Line of Boilers, Furnaces, Radiation and Water Heaters has few open territories in Central West. Excellent earnings for producers. Address Key 728, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

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RELIABLE BOOKKEEPER DESIRES position in plumbing or heating office. Good experience and good references. Address Key 725, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

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FOR SALE—OSTER PIPE THREADing machine practically good as new. Dies for threading up to and including four inches. An unusual offer. Address Box 296, Alpena, Michigan.

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DISTRIBUTORS AND MANUFACTURers Agents Wanted—Manufacturer ten years in heat control field has desirable open territory for reliable distributors and sales agents to handle complete line of temperature regulators and electric valves for gas furnaces and boilers. Liberal commission basis. Address Key 730, "Domestic Engineering," 1900 Prairie Ave., Chicago.

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who are thoroughly experienced in the sale of steam and hot water heating equipment, who have outstanding sales records and who are interested at this time in a lucrative sales opportunity such as does not usually exist, should write for further information. Give full particulars concerning experience, past connections and sales. Present members of organization are aware of this ad and all inquiries will be treated confidentially. Address P. O. Box 1222, Pittsburgh, Pa.

Use this page to get what you want

If you are looking for competent employes; or if you contemplate a change in position, have a patent for sale; wish to purchase or sell a plumbing and heating business; second-hand machinery or tools; form a co-partnership, etc., your advertisement on this page will put you in touch with the people you desire to reach.

The cost of insertion is only eight cents a word and may mean many dollars to you.

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WE MAKE A SPECIALTY OF JOB Tickets, Time Sheets, Letter Heads, Envelopes, etc., for Plumbing Contractors. Prices include delivery to Eastern Points. Samples mailed. Address Louis Fink & Sons, School Building, Laurel Springs, New Jersey.

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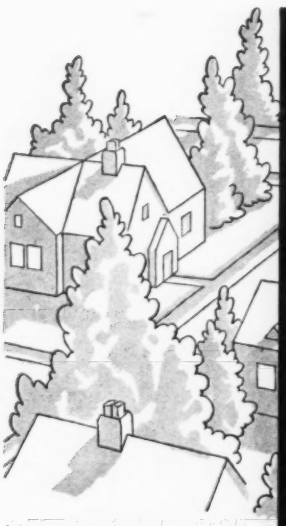

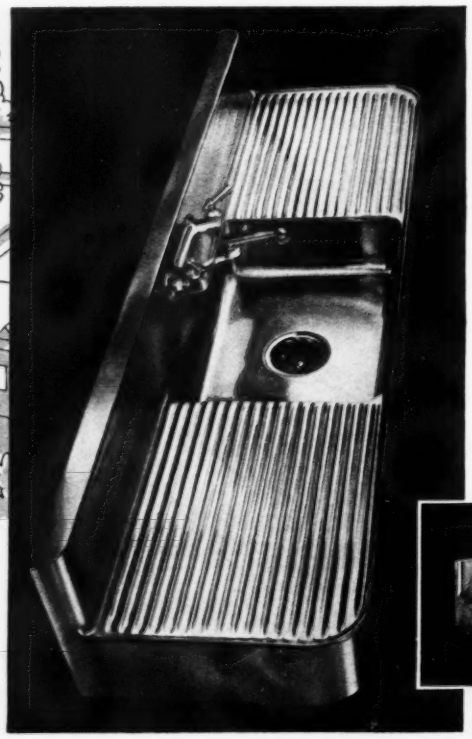

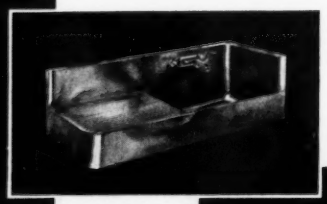

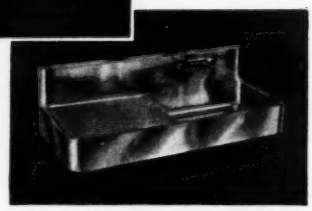

Right: *Double drain board Monel Metal kitchen sink.* Made in nominal sizes of 72″ x 21″ and 60″ x 21″.

Upper insert: *Monel Metal corner kitchen sink.* Corner splasher at bowl end, drain board either right- or left-hand. Made in nominal sizes of 51″ x 21″ and 42″ x 21″.

Lower insert: *Single drain board Monel Metal kitchen sink.* Available in both left- and right-hand drain board models. Made in nominal sizes of 50″ x 21″ and 41″ x 21″.

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the year's big market for MONEL METAL SINKS

● Altho new home construction in your community may be somewhat less active this year, you can still make a wad of profit selling standardized Monel Metal Sinks. In fact, your biggest potential market for this modern equipment is found in houses 10 years old, or older.

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1. Rich, lustrous beauty . . . with a satiny, glass-smooth surface that is easy to clean and keep clean.
2. Neutral, silver tone that blends with any kitchen color scheme and eliminates troublesome color problems in stocking sinks.
3. Rust-proof . . . highly resistant to corrosion . . . strong as steel.
4. Solid metal clear through, with no coating to chip, crack or wear off. Less danger of damage during installation.
5. 10 standardized models and 6 sizes. One-piece construction of heavy gauge Monel Metal. No joints or seams. Reinforced and sound-deadened.
6. 31% more working space than an ordinary sink of same nominal size.
7. Less weight saves labor and expense . . . installing, stocking and handling.
8. Standardized construction and quantity production methods bring prices within reach of the average purse.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York, N. Y.

Gentlemen:—I am interested in Monel Metal Sinks. Please send me complete information on these sinks and samples of the selling helps for Plumbers.

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(Jobber's Address)

*My Name is*_____
(Your Address)

—DE 4-32

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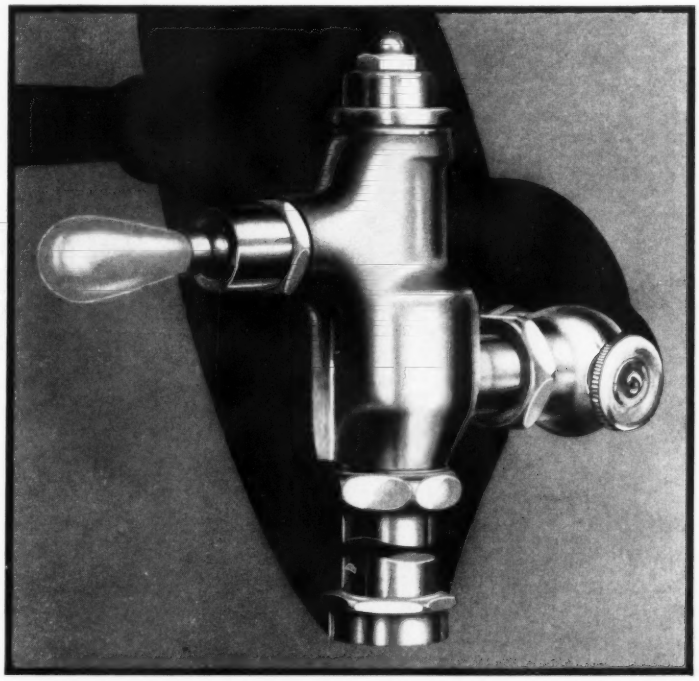
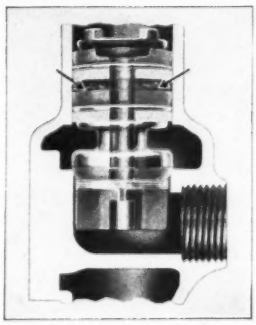
A HIGH NICKEL ALLOY
MONEL METAL
NICKEL ALLOYS LOOK BETTER LONGER

Only the Scovill Flush Valve is

SELF-LUBRICATING





THE SELF-LUBRICATING FEATURE

The arrows indicate the life-prolonging lubricant packed in the valve plunger. All features of the Scovill Flush Valve are covered by design patents No. 1,600,774 and No. 1,813,709.

• • •

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PLUMBERS' BRASS GOODS DIVISION
WATERVILLE • CONNECTICUT

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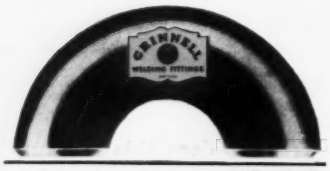
To the making of this valve, Scovill brings 129 years' experience, unusual manufacturing facilities, and exacting laboratory control of materials. There is a Scovill Flush Valve in the style, finish and price you want. Send for the special booklet presenting the entire line of valves.

SCOVILL

Scovill

Announcing



180°
Short Turn
Standard weight
Long Turn
Standard weight
Extra heavy weight

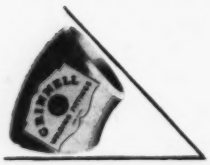
180°

Long Turn
Standard weight
Extra heavy weight

90°

Short Turn
Standard weight

90°



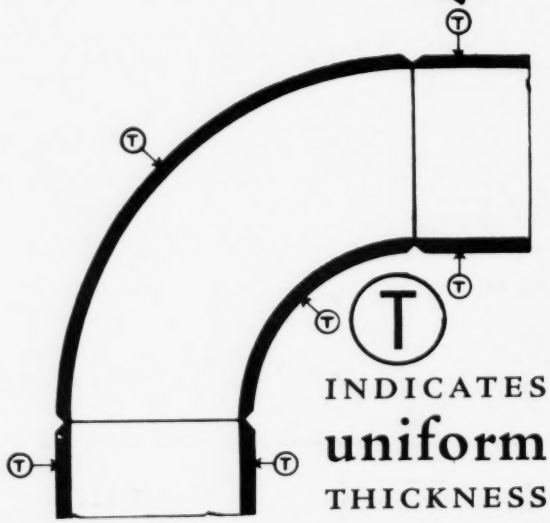
Long Turn
Standard weight
Extra heavy weight

45°

*

1. Made from seamless tubing.
2. Uniform thickness on inner and outer walls.
3. Wall thickness same as pipe.
4. Homogeneous metal throughout structure.
5. No buckling or deformation.
6. No flattening of cross section.
7. Conformity to standard and extra heavy pipe sizes.

GRINNELL WELDING FITTINGS
MADE IN U.S.A.



INDICATES
uniform
THICKNESS

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These fittings are distinguished by seven outstanding features.* Send the coupon or write the nearest branch for further information.

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